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ELECTRONICS

SERVICE MANUAL DVD-C600

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SAMSUNG

DVD PLAYER

DVD-C600

SERVICE Manual

DVD PLAYER

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1. Precautions

1-1 Safety Precautions

1) Before returning an instrument to the customer, always make a safety check of the entire instrument, including, but not limited to, the following items:

(1) Be sure that no built-in protective devices are defective or have been defeated during servicing. (1)Protective shields are provided to protect both the technician and the customer. Correctly replace all missing protective shields, including any remove for servicing convenience.
(2)When reinstalling the chassis and/or other assembly in the cabinet, be sure to put back in place all protective devices, including, but not limited to, nonmetallic control knobs, insulating fish papers, adjustment and compartment covers/shields, and isolation resistor/capacitor networks. Do not operate this instrument or permit it to be operated without all protective devices correctly installed and functioning.

(2) Be sure that there are no cabinet openings through which adults or children might be able to insert their fingers and contact a hazardous voltage. Such openings include, but are not limited to, excessively wide cabinet ventilation slots, and an improperly fitted and/or incorrectly secured cabinet back cover.

(3) Leakage Current Hot Check-With the instrument completely reassembled, plug the AC line cord directly into a 120V AC outlet. (Do not use a isolation transformer during this test.) Use a leakage current tester or a metering system that complies with American National Standards institute (ANSI) C101.1 Leakage Current for Appliances and Underwriters Laboratories (UL) 1270 (40.7). With the instrument's AC switch first in the ON position and then in the OFF position, measure from a known earth ground (metal water pipe, conduit, etc.) to all exposed metal parts of the instrument (antennas, handle brackets, metal cabinets, screwheads, metallic overlays, control shafts, etc.), especially any exposed metal parts that offer an electrical return path to the chassis.
Any current measured must not exceed 0.5mA. Reverse the instrument power cord plug in the outlet and repeat the test. See Fig. 1-1.
Any measurements not within the limits specified herein indicate a potential shock hazard that must be eliminated before returning the instrument to the customer.

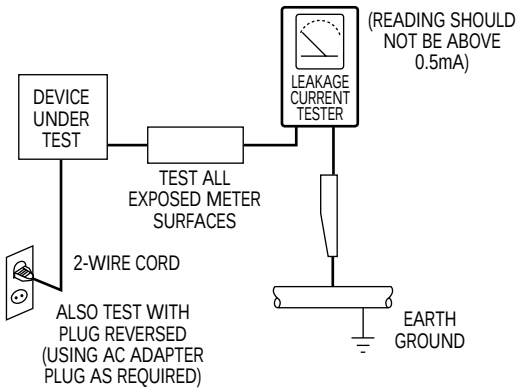

(READING SHOULD NOT BE ABOVE 0.5mA)
LEAKAGE CURRENT TESTER
DEVICE UNDER TEST
TEST ALL EXPOSED METER SURFACES
2-WIRE CORD
ALSO TEST WITH PLUG REVERSED (USING AC ADAPTER PLUG AS REQUIRED)
EARTH GROUND

Fig. 1-1 AC Leakage Test

(4) Insulation Resistance Test Cold Check-(1) Unplug the power supply cord and connect a jumper wire between the two prongs of the plug. (2) Turn on the power switch of the instrument. (3) Measure the resistance with an ohmmeter between the jumpered AC plug and all exposed metallic cabinet parts on the instrument, such as screwheads, antenna, control shafts, handle brackets, etc. When an exposed metallic part has a return path to the chassis, the reading should be between 1 and 5.2 megohm. When there is no return path to the chassis, the reading must be infinite. If the reading is not within the limits specified, there is the possibility of a shock hazard, and the instrument must be re-pared and rechecked before it is returned to the customer. See Fig. 1-2.

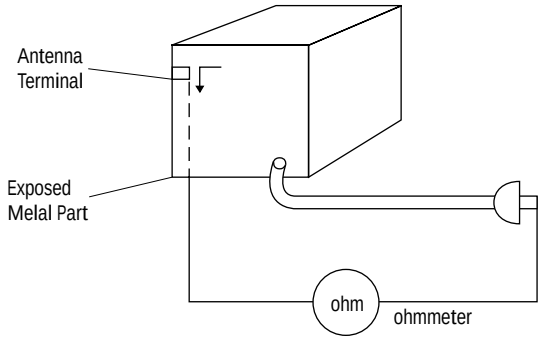


Fig. 1-2 Insulation Resistance Test

2) Read and comply with all caution and safety related notes non or inside the cabinet, or on the chassis.

3) Design Alteration Warning-Do not alter of add to the mechanical or electrical design of this instrument. Design alterations and additions, including but not limited to, circuit modifications and the addition of items such as auxiliary audio output connections, might alter the safety characteristics of this instrument and create a hazard to the user. Any design alterations or additions will make you, the service, responsible for personal injury or property damage resulting therefrom.

4) Observe original lead dress. Take extra care to assure correct lead dress in the following areas:
(1) near sharp edges, (2) near thermally hot parts (be sure that leads and components do not touch thermally hot parts), (3) the AC supply, (4) high voltage, and (5) antenna wiring. Always inspect in all areas for pinched, out-of-place, or frayed wiring, Do not change spacing between a component and the printed-circuit board. Check the AC power cord for damage.

5) Components, parts, and/or wiring that appear to have overheated or that are otherwise damaged should be replaced with components, parts and/ or wiring that meet original specifications.
Additionally, determine the cause of overheating and/or damage and, if necessary, take corrective action to remove any potential safety hazard.

6) Product Safety Notice-Some electrical and mechanical parts have special safety-related characteristics which are often not evident from visual inspection, nor can the protection they give necessarily be obtained by replacing them with components rated for higher voltage, wattage, etc. Parts that have special safety characteristics are identified by shading, an (⚠)or a (⚠)on schematics and parts lists. Use of a substitute replacement that does not have the same safety characteristics as the recommended replacement part might created shock, fire and/or other hazards. Product safety is under review continuously and new instructions are issued whenever appropriate.

1-2 Servicing Precautions

CAUTION : Before servicing Instruments covered by this service manual and its supplements, read and follow the Safety Precautions section of this manual.

Note : If unforseen circument create conflict between the following servicing precautions and any of the safety precautions, always follow the safety precautions. Remember: Safety First.

1-2-1 General Servicing Precautions

(1) a. Always unplug the instrument's AC power cord from the AC power source before (1) re-moving or reinstalling any component, circuit board, module or any other instrument assembly, (2) disconnecting any instrument electrical plug or other electrical connection, (3) connecting a test substitute in parallel with an electrolytic capacitor in the instrument.

b. Do not defeat any plug/socket B+ voltage interlocks with which instruments covered by this service manual might be equipped.

c. Do not apply AC power to this instrument and /or any of its electrical assemblies unless all solid-state device heat sinks are correctly installed.

d. Always connect a test instrument's ground lead to the instrument chassis ground before connecting the test instrument positive lead. Always remove the test instrument ground lead last.

Note : Refer to the Safety Precautions section ground lead last.

(2) The service precautions are indicated or printed on the cabinet, chassis or components. When servicing, follow the printed or indicated service precautions and service materials.

(3) The components used in the unit have a specified flame resistance and dielectric strength.
When replacing components, use components which have the same ratings. Components i-entified by shading, by(⚠) or by (⚠) in the circuit diagram are important for safety or for the characteristics of the unit. Always replace them with the exact replacement components.

(4) An insulation tube or tape is sometimes used and some components are raised above the printed wiring board for safety. The internal wiring is sometimes clamped to prevent contact with heating components. Install such elements as they were.

(5) After servicing, always check that the removed screws, components, and wiring have been installed correctly and that the portion around the serviced part has not been damaged and so on. Further, check the insulation between the blades of the attachment plug and accessible conductive parts.

1-2-2 Insulation Checking Procedure

Disconnect the attachment plug from the AC outlet and turn the power ON. Connect the insulation resistance meter (500V) to the blades of the attachment plug. The insulation resistance between each blade of the attachment plug and accessible conductive parts(see note) should be more than 1 Megohm.

Note : Accessible conductive parts include metal panels, input terminals, earphone jacks, etc.

1-3 ESD Precautions

Electrostatically Sensitive Devices (ESD)

Some semiconductor (solid state) devices can be damaged easily by static electricity.
Such components commonly are called Electrostatically Sensitive Devices(ESD). Examples of typical ESD devices are integrated circuits and some field-effect transistors and semiconductor chip components. The following techniques should be used to help reduce the incidence of component damage caused by static electricity.

(1) Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any electrostatic charge on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging wrist strap device, which should be removed for potential shock reasons prior to applying power to the unit under test.

(2) After removing an electrical assembly equipped with ESD devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.

(3) Use only a grounded-tip soldering iron to solder or unsolder ESD devices.

(4) Use only an anti-static solder removal devices. Some solder removal devices not classified as “anti-static” can generate electrical charges sufficient to damage ESD devices.

(5) Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ESD devices.

(6) Do not remove a replacement ESD device from its protective package until immediately before your are ready to install it.(Most replacement ESD devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive materials).

(7) Immediately before removing the protective materials from the leads of a replacement ESD device, touch the protective material to the chassis or circuit assembly into which the device will be installed.

CAUTION : Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.

(8) Minimize bodily motions when handling unpackaged replacement ESD devices. (Otherwise harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity sufficient to damage an ESD device).

1-4 Handling the optical pick-up

The laser diode in the optical pick up may suffer electrostatic breakdown because of potential static electricity from clothing and your body.

The following method is recommended.

(1) Place a conductive sheet on the work bench (The black sheet used for wrapping repair parts.)

(2) Place the set on the conductive sheet so that the chassis is grounded to the sheet.

(3) Place your hands on the conductive sheet(This gives them the same ground as the sheet.)

(4) Remove the optical pick up block

(5) Perform work on top of the conductive sheet. Be careful not to let your clothes or any other static sources to touch the unit.

Be sure to put on a wrist strap grounded to the sheet.
Be sure to lay a conductive sheet made of copper etc. Which is grounded to the table.

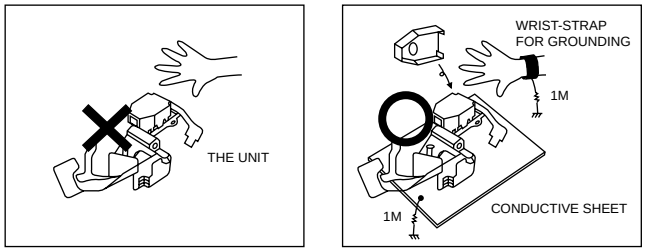


Fig.1-3

(6) Short the short terminal on the PCB, which is inside the Pick-Up ASS'Y, before replacing the Pick-Up. (The short terminal is shorted when the Pick-Up Ass'y is being lifted or moved.)

(7) After replacing the Pick-up, open the short terminal on the PCB.

1-5 Pick-up disassembly and reassembly

1-5-1 Disassembly

1) Remove the power cable.
2) Switch SW1 on Deck PCB to “OFF” before removing the FPC.
   (Inserted into Main PCB MCN06. See Fig. 1-4)
3) Disassemble the Deck.
4) Disassemble the Deck PCB.

1-5-2 Assembly

1) Replace the Pick-up.
2) Assemble the Deck PCB.
3) Reassemble the Deck.
4) Insert FPC into Main PCB MCN06 and switch SW1 on Deck PCB to “ON”. (See Fig 1-4)

Note : If the assembly and disassembly are not done in correct sequence, the Pick-up may be damaged.

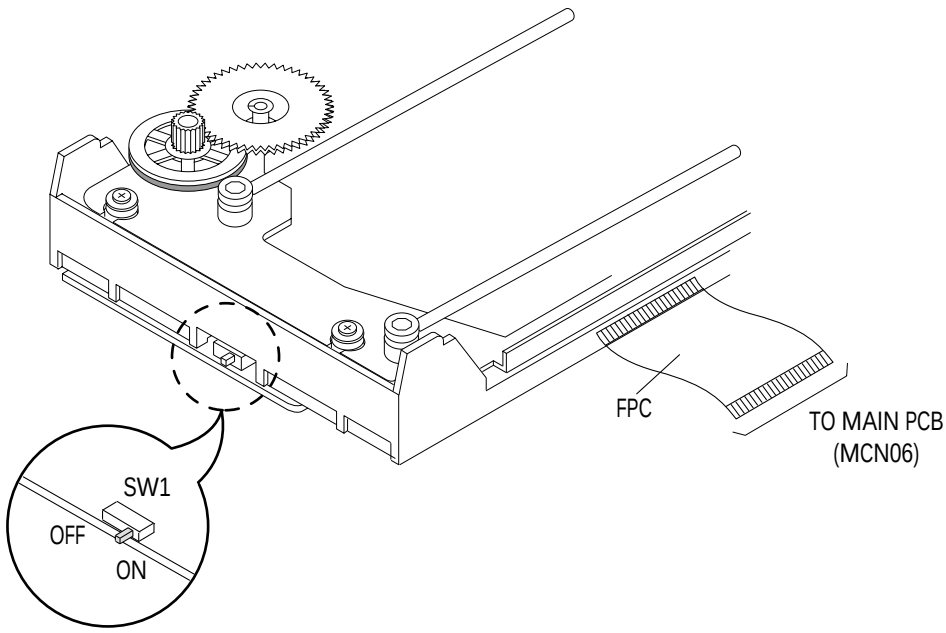
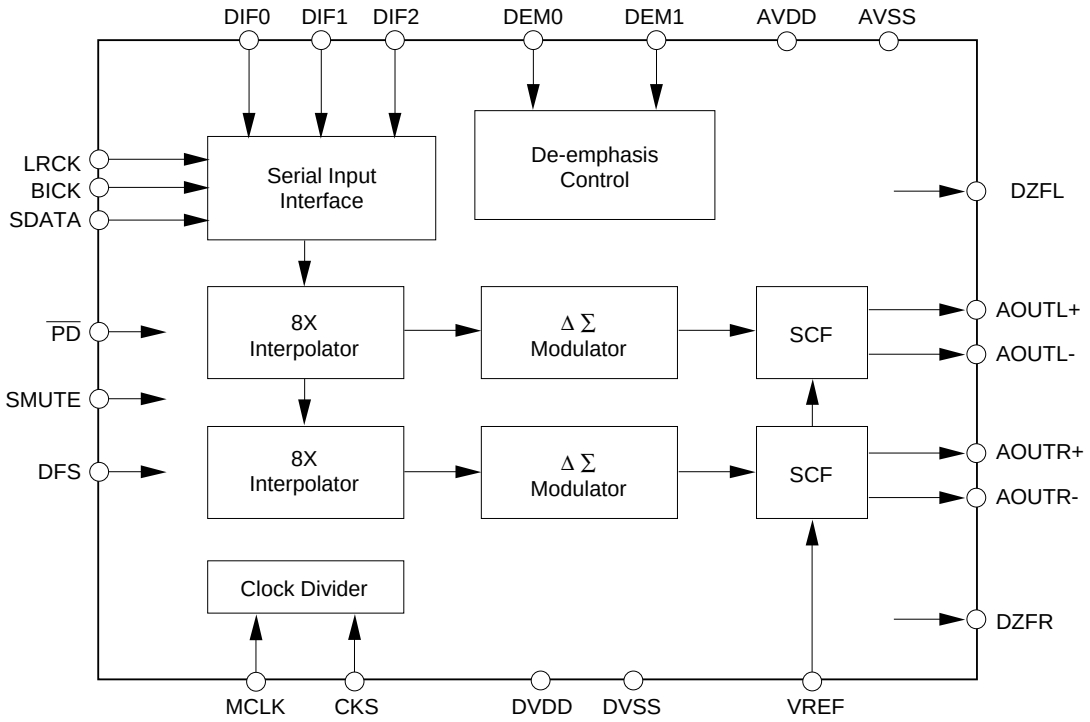


Fig. 1-4

2. Reference Information

2-1 IC Dsecriptions

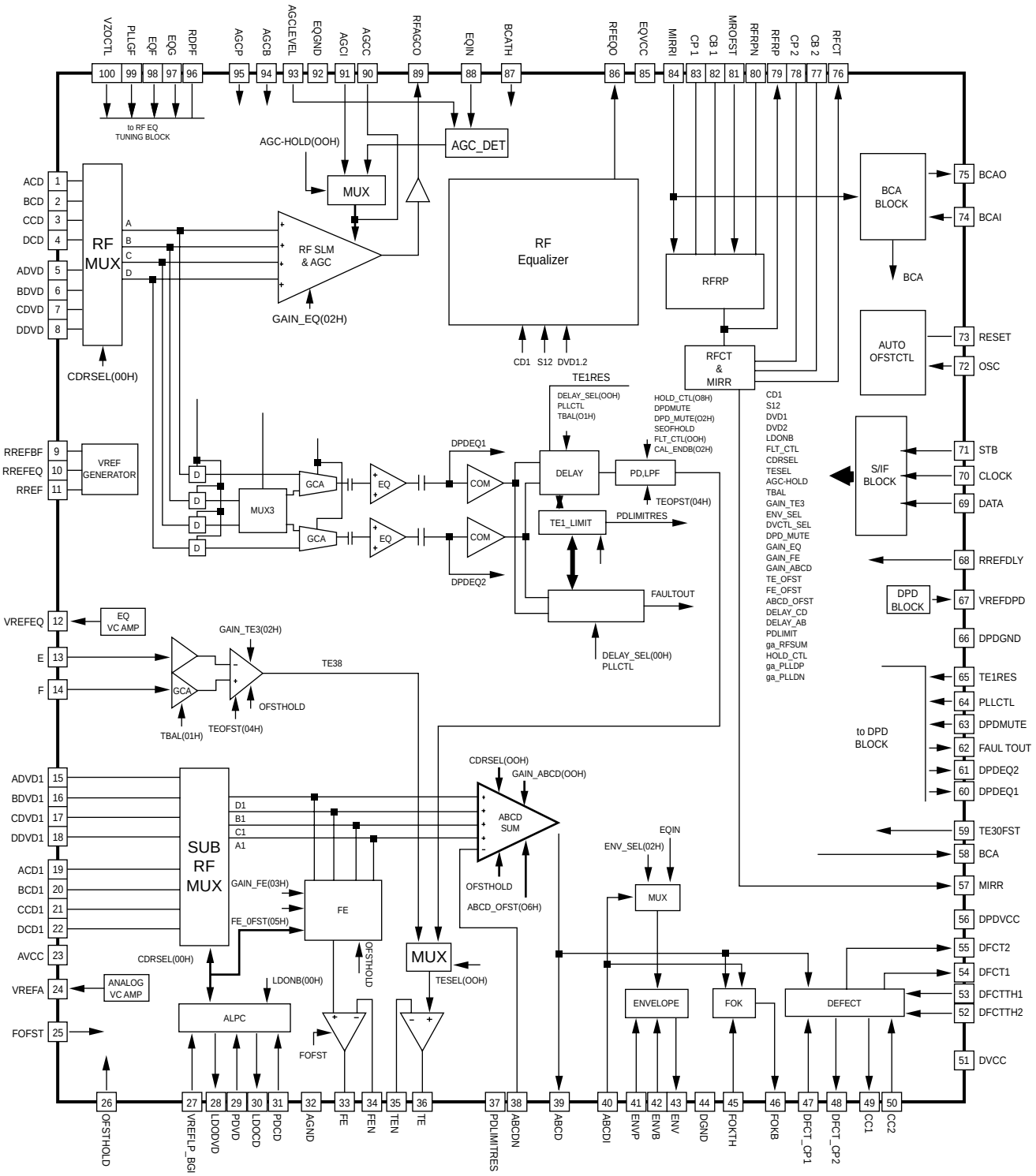
2-1-1 AIC1 (AK4324 ; Digital-to-Analog Converter)



PIN	I/O	NAME	FUNCTION	PIN	I/O	NAME	FUNCTION
1	-	DVSS	Digital ground pin	13	I	DIF0	Digital input format pin
2	I	DVDD	Digital power supply	14	I	DIF1	Digital input format pin
3	I	CKS	Master clock select pin (Internal pull-down pin) Nomal speed "L":MCLK = 256fs, "H":MCLK = 384fs Double speed "L":MCLK = 128fs, "H":MCLK = 192fs	15	I	DIF2	Digital input format pin
4	I	MCLK	Master clock input pin	16	O	AOUTR-	Rch negative analog output pin
5	I	$\overline{PD}$	Power-Down mode pin. When at "L", the AK4324 is in power-down and is held in rest. The AK4324 should always be reset upon power-pin	17	O	AOUTR+	Rch positive analog output pin
6	I	BICK	Audio serial data input pin 64fs clock is recommended to be input on this pin	18	O	AOUTL-	Lch negative analog output pin
7	I	SDATA	Audio serial data input pin 2's complement MSB-first data is input on this pin.	19	O	AOUTL+	Lch positive analog output pin
8	I	LRCK	L/R clock pin.	20	-	AVSS	Analog ground pin
9	I	SMUTE	Soft mute pin When this pin goes "H", soft mute cycle is initiated When returning "L", the output mute releases.	21	O	VREF	Voltage reference input pin
10	I	DFS	Double speed sampling mode pin (Internal pull-down pin) "L":normal speed, "H":double speed	22	O	AVDD	Analog power supply pin.
11	I	DEM0	De-emphasis frequency select pin	23	O	DZFR	Rch zero input detect pin
12	I	DEM1	De-emphasis frequency select pin	24	O	DZFL	Lch zero input detect pin

Note : Allinput pins except internal pull-down pins should not be left floating.

2-1-2 RIC1 (KS1461 ; RF)



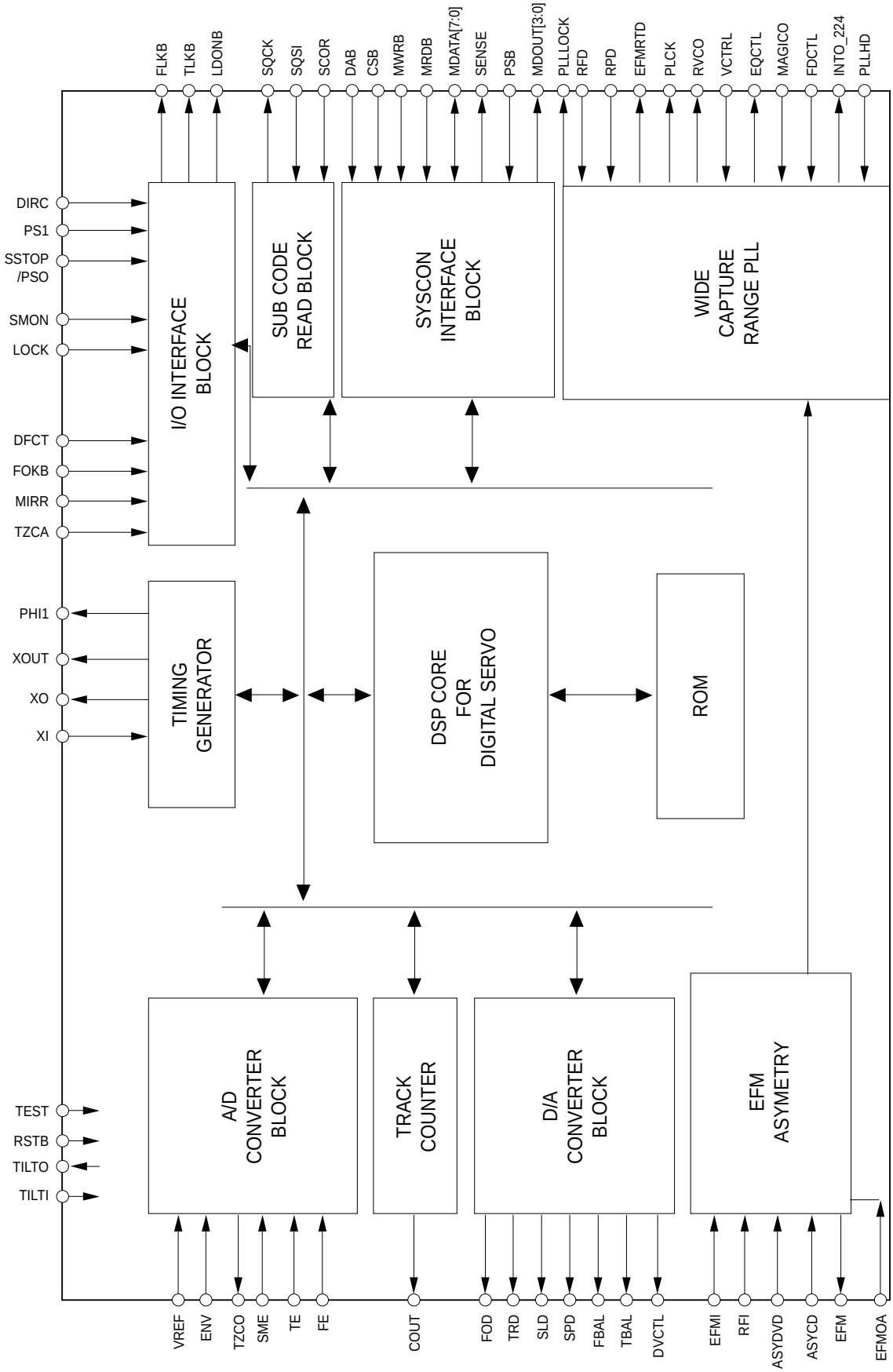
PIN NAME		I/O	FUNCTION
1	ACD	I	CD optical main beam A AC coupling input port for RF
2	BCD	I	CD optical main beam B AC coupling input port for RF
3	CCD	I	CD optical main beam C AC coupling input port for RF
4	DCD	I	CD optical main beam D AC coupling input port for RF
5	ADVD	I	DVD optical main beam A AC coupling input port for RF
6	BDVD	I	DVD optical main beam B AC coupling input port for RF
7	CDVD	I	DVD optical main beam C AC coupling input port for RF
8	DDVD	I	DVD optical main beam D AC coupling input port for RF
9	RREFBF	-	RF AMP I/O buffer bias resistance connection port
10	RREFEQ	-	RF EQ bias resistance connection port
11	RREF	-	Analog block bias resistance connection port
12	VREFEQ	O	CAP connection port for RF EQ center voltage
13	E	I	CD optical sub beam E input port for SERVO
14	F	I	CD optical sub beam F input port for SERVO
15	ADVD1	I	DVD optical main beam A input port for SERVO
16	BDVD1	I	DVD optical main beam B input port for SERVO
17	CDVD1	I	DVD optical main beam C input port for SERVO
18	DDVD1	I	DVD optical main beam D input port for SERVO
19	ACD1	I	CD optical main beam F input port for SERVO
20	BCD1	I	CD optical main beam F input port for SERVO
21	CCD1	I	CD optical main beam F input port for SERVO
22	DCD1	I	CD optical main beam F input port for SERVO
23	AVCC	P	Power voltage input port for analog part
24	VREFA	-/O	CAP connection port for analog part center voltage, Use at other block
25	FOFST	O	CAP connection port for focus auto offset (OPEN)
26	OFSTHOLD	I	ON/OFF connection port for auto offset block (L : auto offset adjustment H : serial offset adjustment)
27	VREFLP_BGI	I	BANDGAP voltage input port for ALPC
28	LDODVD	O	DVD optical laser diode driving voltage output port
29	PDDVD	I	DVD optical laser monitor diode voltage input port
30	LDOCD	O	CD optical laser diode driving voltage output port
31	PDCD	I	CD optical laser monitor diode voltage input port
32	AGND	P	Power GND port for analog part
33	FE	O	FE AMP output port

PIN NAME		I/O	FUNCTION
34	FEN	I	FE Input port for AMP GAIN setting
35	TEN	I	Input port for TE AMP GAIN setting
36	TE	O	TE AMP output port
37	PDLIMTRES	-	Bias resistance port for PDLIMIT
38	ABCDN	I	Input port for ABCD AMP GAIN setting
39	ABCD	O	ABCD AMP output port
40	ABCDI	I	ABCD AC coupling input port for SERVO monitor
41	ENVP	-	Peak hold time constant setting RC connection port for RF envelope detect
42	ENVB	-	Bottom hold time constant setting RC connection port for RF envelope detect
43	ENV	O	RF envelope detect output port
44	DGND	P	Power GND input port for digital circuit
45	FOKTH	I	Focus OK comparing level input port
46	FOKB	O	Focus OK comparator output port (L: FOCUS OK)
47	DFCT_CP1	-	Peak hold time constant connection port SERVO defect max. time setting
48	DFCT_CP2	-	Peak hold time constant connection port PLL defect min. time setting
49	CC1	O	Output port of peak detector for defect
50	CC2	I	AC coupling input port for defect
51	DVCC	P	Power voltage input port for digital circuit
52	DVCTTH2	-	Resistance connection port for PLL defect comparating level setting
53	DFCTTH1	-	Resistance connection port for SERVO defect comparating level setting
54	DFCT1	O	Defect output port for SERVO
55	DFCT2	O	Defect output port for PLL
56	DPDVCC	P	Power voltage input port for DPD TE
57	MIRR	O	Mirror output port
58	BCA	O	BCA output port
59	TE3OFST	-	Resistance connection port for 3BTE offset
60	DPDEQ1	O	DPD EQ (A+C) output port
61	DPDEQ2	O	DPD EQ (B+D) output port
62	FAULTOUT	O	DPD defect waveform output port (MONITOR)
63	DPDMUTE	I	DPD TE MUTE control port (H : MUTE)
64	PLLCTL	I	DPD TE PLL variable input port

PIN NAME		I/O	FUNCTION
65	TE1RES	I	DPD TE PLL variable bias resistance
66	DPDGND	P	Power GND input port for DPD TE
67	VREFDPD	O	CAP connection port for DPD TE center
68	RREFDLY	-	Bias resistance connection port for delta block
69	DATA	I	Data input port
70	CLOCK	I	Clock input port
71	STB	I	Data enable input port
72	OSC		OSC time constant input port for auto offset block
73	RESET	I	Reset input port for auto offset block (L : RESET)
74	BCAI	I	BCA FILTER1
75	BCAO	O	BCA FILTER2
76	RFCT	O	RF ripple center voltage output port for mirror
77	CB2	-	Bottom hold time constant RC connection port for RFCT generation
78	CP2	-	Peak hold time constant RC connection port for RFCT generation
79	RFRP	O	RF ripple AMP output port for mirror
80	RFRPN	I	RF ripple AMP GAIN input port for mirror
81	MROFST	I	RF ripple offset control port for mirror
82	CB1	-	Bottom hold time constant RC connection port for RFCT generation
83	CP1	-	Peak hold time constant RC connection port for RFCT generation
84	MIRRI	I	Input port for MIRR signal generation
85	EQVCC	P	Power voltage input port for RF EQ
86	RFEQO	O	RF EQ output port
87	BCATH	I	BCA comparating level control port
88	EQIN	I	RFAGCO input port for RF EQ
89	RFAGCO	O	RF AGC AMP output port
90	AGCC	-	AGC time constant CAP connection port
91	AGCI	I	When AGC is “HOLD”, AGC voltage input port
92	EQGND	P	Power GND input port for RF EQ
93	AGCLEVEL	I	AGC level control voltage input port
94	AGCB	-	RF bottom hold time constant RC connection port for RF AGC
95	AGCP	-	RF peak hold time constant RC connection port for RF AGC

PIN NAME		I/O	FUNCTION
96	RDPF	-	Bias resistance connection port for RF EQ frequency setting
97	EQG	I	RF EQ boost gain control voltage input port
98	EQF	I	RF EQ peak frequency control voltage input port
99	PLLGF	I	RF EQ boost, peak frequency gain control port corresponding to wideband PLL (PLLG. PLLF resistance internal design)
100	VZOCTL	I	RF EQ control port (When No. PLLG isn't adjusted, apply DC CTL voltage.)

2-1-3 SIC1 (KS1452 ; Digital Servo)



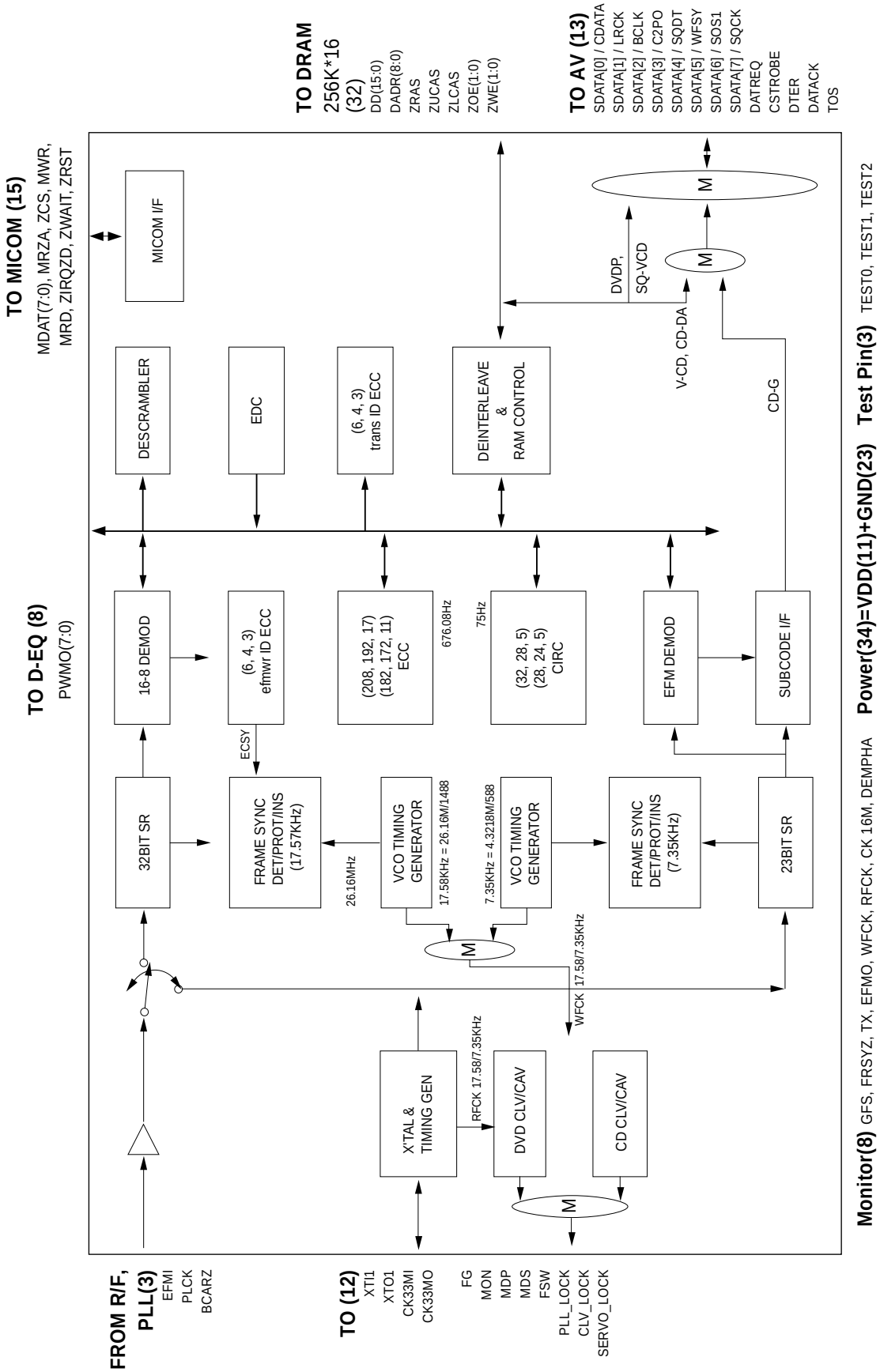
PIN NAME		I/O	FUNCTION
1	MDOUT3	O	Mode data3 out controlled by micom
2	SSTOP/PSO	I	Limit switch/sled position sensor input pin0
3	PS1	I	Sled motor position sensor input pin 1
4	TEST	I	Test pin (L : normal H : test)
5	COUT	O	Counter clock
6	FLKB	O	Focus servo lock signal output pin
7	TLKB	O	Tracking servo lock signal output pin
8	PSB	I	0 : 1BIT 1 : 8BIT
9	RSTB	I	System reset signal input pin
10	CSB	I	Micom chip select pin
11	DAB	I	Micom data/address select pin
12	MWRB	I	Micom write clock signal input pin
13	MRDB	I	Micom read clock signal input pin
14	MDATA0	I/O	Micom data pin 0
15	MDATA1	I/O	Micom data pin 1
16	MDATA2	I/O	Micom data pin 2
17	MDATA3	I/O	Micom data pin 3
18	MDATA4	I/O	Micom data pin 4
19	MDATA5	I/O	Micom data pin 5
20	MDATA6	I/O	Micom data pin 6
21	MDATA7	I/O	Micom data pin 7
22	SENSE	O	Internal status monitor pin
23	DVDD	P	Servo logic & ROM VDD power supply pin
24	XI	I	System clock signal input pin
25	XO	O	System clock signal output pin
26	XOUT	O	Clock out (33.9688MHz) to DSP
27	DVSS	P	Servo logic & ROM VSS power supply pin
28	SQCK	O	Clock output pin for subcode data read
29	SQSI	I	Subcode data input pin
30	SCOR	I	Timing detection input pin for subcode data read
31	SMON	I	Motor ON signal input pin
32	LOCK	I	Lock signal input pin
33	DIRC	I	Direct jump control (for 1 track jump)

PIN NAME		I/O	FUNCTION
34	FOKB	I	Focus OK signal input pin
35	FDCTL	I	PLL frequency detect control input pin
36	LDONB	O	Laser diode ON signal output pin
37	DFCT	I	Defect Detection signal input pin
38	MIRR	I	Mirror signal input pin
39	PLLHD	I	PLL hold signal from micom
40	INTO_224	O	Servo interrupt monitor pin
41	PVDD	P	PLL logic block VDD power supply pin
42	PLCK	O	PLCK
43	PLLLOCK	O	Frequency lock detect output (H : Lock L : Unlock)
44	EFMRTD	O	Latched EFM output signal
45	PVSS	P	PLL logic block VSS power supply pin
46	RVCO	I	Resistor pin for VCO GAIN
47	RFD	I	Gain adjust resister for frequence detector
48	RPD	I	Gain adjust resister for phase detector
49	VCTL	I	Control voltage for VCO
50	MAGICO	I	Input for hysteresis control of FD output (for test)
51	EFMOA	I	EFM offset adjustment pin
52	TZCO	O	Tracking zero cross output pin
53	SVDD	P	Servo CPU VDD power supply pin
54	EQCTL	O	EQ control signal
55	EFMI	I	EFM signal for test
56	EFMO	O	EFM signal
57	LPFDVD	I	Asymmetric input signal for DVD
58	LPFCD	I	Asymmetric input signal for CD
59	RFI	I	RF input signal
60	SVSS	P	Servo CPU VSS power supply pin
61	AVSS	P	Analog block VSS power supply pin
62	SME	I	Spindle error input pin
63	VREF	I	Reference voltage input pin
64	TE	I	Tracking error signal input pin

PIN NAME		I/O	FUNCTION
65	FE	I	Focus error signal input pin
66	ENV	I	RF envelope input pin
67	TILTI	I	Tilt in (reserved)
68	AVDD	P	Analog block VDD power supply pin
69	TILTO	O	Tilt out (reserved)
70	DVCTL	O	Depth variation control signal output pin
71	TBAL	O	Tracking balance signal output pin
72	FBAL	O	Focus balance signal output pin

PIN NAME		I/O	FUNCTION
73	SLD	O	Sled motor drive signal output pin
74	SPD	O	Spindle motor drive signal output pin
75	FOD	O	Focus actuator drive signal output pin
76	TRD	O	Tracking actuator drive signal output pin
77	TZCA	I	TE signal for tracking zero cross input pin
78	MDOUT0	O	Mode data 0 out controlled by micom
79	MDOUT1	O	Mode data 1 out controlled by micom
80	MDOUT2	O	Mode data 2 out controlled by micom

2-1-4 DIC1 (KS1453 ; DVD Data Processor)



PIN	NAME	FUNCTION
1	DVSS	Digital GND (0V)
2	ZCS_IN	Chip select (Active Low)
3	MRZA_IN	Micom register select (L -> Register H -> Data)
4	DVSS	Digital GND (0V)
5	MDAT7_BI	Micom data bus
6	MDAT6_BI	Micom data bus
7	MDAT5_BI	Micom data bus
8	MDAT4_BI	Micom data bus
9	MDAT3_BI	Micom data bus
10	MDAT2_BI	Micom data bus
11	MDAT1_BI	Micom data bus
12	MDAT0_BI	Micom data bus
13	DVDD	Digital power (+5V)
14	XTI_IN	System clock input for 26.16 MHz
15	XTO_OUT	System clock output for 26.16 MHz
16	DVSS	Digital GND (0V)
17	DD15_BI	DRAM data bus
18	DD0_BI	DRAM data bus
19	DD14_BI	DRAM data bus
20	DD1_BI	DRAM data bus
21	DVSS	Digital GND (0V)
22	DD13_BI	DRAM data bus
23	DD2_BI	DRAM data bus
24	DD12_BI	DRAM data bus
25	DD3_BI	DRAM data bus
26	DVDD	Digital power (+5V)
27	DD11_BI	DRAM data bus
28	DD4_BI	DRAM data bus
29	DD10_BI	DRAM data bus
30	DD5_BI	DRAM data bus
31	DVSS	Digital GND (0V)
32	DD9_BI	DRAM data bus

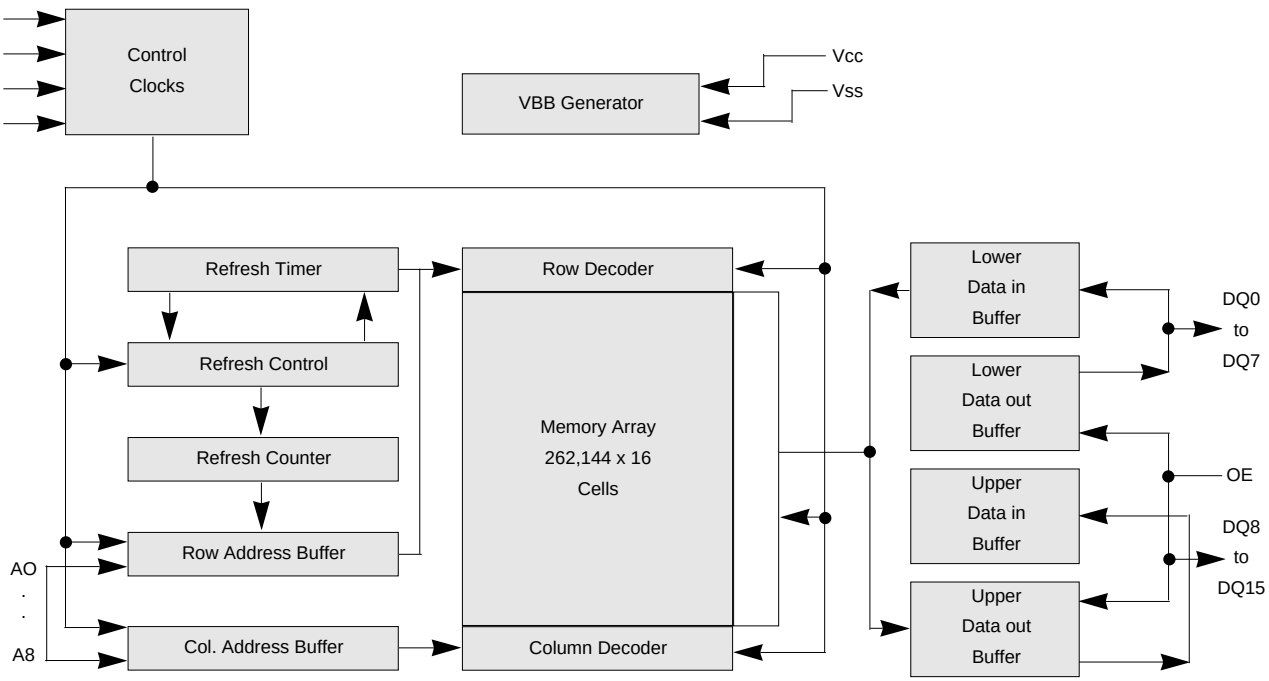
PIN	NAME	FUNCTION
33	DD6_BI	DRAM data bus
34	DD8_BI	DRAM data bus
35	DD7_BI	DRAM data bus
36	DVSS	Digital GND (0V)
37	ZLCAS_OUT	DRAM row column address strobe
38	ZUCAS_OUT	DRAM upper column address strobe
39	ZWE1_OUT	DRAM write enable 1 (8M ONLY)
40	ZWE0_OUT	DRAM write enable 0 (4M, 8M, 16M)
41	ZOE1_OUT	DRAM output enable 1 (16M, -------, 16M)
42	DVDD	Digital power (+5V)
43	ZOEO_OUT	DRAM output enable 0
44	ZRAS_OUT	DRAM row address strobe
45	DADR8_OUT	DRAM address bus
46	DADR7_OUT	DRAM address bus
47	DVSS	Digital GND (0V)
48	DADR0_OUT	DRAM address bus
49	DADR6_OUT	DRAM address bus
50	DADR1_OUT	DRAM address bus
51	DADR5_OUT	DRAM address bus
52	DADR2_OUT	DRAM address bus
53	DADR4_OUT	DRAM address bus
54	DADR3_OUT	DRAM address bus
55	DVSS	Digital GND (0V)
56	DVSS	Digital GND (0V)
57	TOS_OUT	Top of sector
58	DATACK_OUT	Data acknowledge signal output
59	DVDD	Digital power (+5V)
60	SDATA0_OUT	DVD data/CD data bitstream output
61	SDATA1_OUT	DVD data/CD data L/R clock (LRCK)
62	SDATA2_OUT	DVD data/CD data bit clock (BLCK)
63	SDATA3_OUT	DVD data/CD data error flag (C2P0)
64	SDATA4_OUT	DVD data/Sub code serial data (SQDT)
65	SDATA5_OUT	DVD data/Sub code frame sink (WFSY)

PIN	NAME	FUNCTION
66	SDATA6_OUT	DVD data/Sub code block sink (S0S1)
67	SDATA7_BI	DVD data/Sub code serial clock (SQCK)
68	DVSS	Digital GND (0V)
69	CSTROBE_OUT	Data strobe (clock) output
70	DATREQ_IN	Data request from A/V decoder or ROM decoder
71	DTER_OUT	DVD data error output
72	DVSS	Digital GND (0V)
73	PWM07_OUT	PWM output signal
74	PWM06_OUT	PWM output signal
75	PWM05_OUT	PWM output signal
76	PWM04_OUT	PWM output signal
77	DVDD	Digital power (+5V)
78	PWM03_OUT	PWM output signal
79	PWM02_OUT	PWM output signal
80	PWM01_OUT	PWM output signal
81	PWM00_OUT	PWM output signal
82	DVSS	Digital GND (0V)
83	DVSS	Digital GND (0V)
84	DVSS	Digital GND (0V)
85	DVDD	Digital power (+5V)
86	DVDD	Digital power (+5V)
87	DVSS	Digital GND (0V)
88	DVSS	Digital GND (0V)
89	DVSS	Digital GND (0V)
90	DVSS	Digital GND (0V)
91	FRSYZ_OUT	Frame sync out
92	TX_OUT	Digital out
93	GFS_OUT	Good frame sync detection result output ("H" active)
94	DVSS	Digital GND (0V)
95	CK33MI_IN	System clock input for 33.8688MHz
96	CK33MO_OUT	System clock output for 33.8688MHz
97	DVSS	Digital GND (+5V)

PIN	NAME	FUNCTION
98	TEST0_IN	Test mode setting port
99	TEST1_IN	Test mode setting port
100	TEST2_IN	Test mode setting port
101	EFMO_OUT	EFM out
102	WFCK_OUT	Write frame pulse
103	RFCK_OUT	Reference frame pulse
104	PLCK_IN	Phase locked clock
105	DVSS	Digital GND (0V)
106	PLLLOCK_OUT	Lock signal for PLL
107	CLVLOCK_OUT	Lock signal for CLV
108	SERLOCK_OUT	Lock signal for SERVO
109	MDP_OUT	Spindle motor phase control signal (3-state)
110	MDS_OUT	Spindle motor speed control signal (3-state)
111	DVSS	Digital GND (0V)
112	DVSS	Digital GND (0V)
113	MON_OUT	Spindle motor ON/OFF control output
114	FG_IN	Reference signal for CAV
115	FSW_OUT	Spindle motor output filter conversion output (3-state)
116	EFMI_IN	EFM/EFM+ signal input
117	DVDD	Digital power (+5V)
118	DVDD	Digital power (+5V)
119	DVDD	Digital power (+5V)
120	CK16M_OUT	2Î–¡÷ clock of CK33M/16.934MHz
121	DEMPHA_OUT	When DEEMPHASIS is ON, "HIGH".
122	BCARZ_IN	BCA input signal
123	DVSS	Digital GND (0V)
124	ZRST_IN	Hardware reset active low
125	ZWAIT_OUT	Micom read/write access wait ("L" wait)
126	ZIRQZD_OUT	Interrupt request from micom
127	MRD_IN	Micom read strobe (schmidt trigger)
128	MWR_IN	Micom write strobe (schmidt trigger)

2-1-5 DIC2 (KM416C254BJ-6 ; CMOS DRAM)

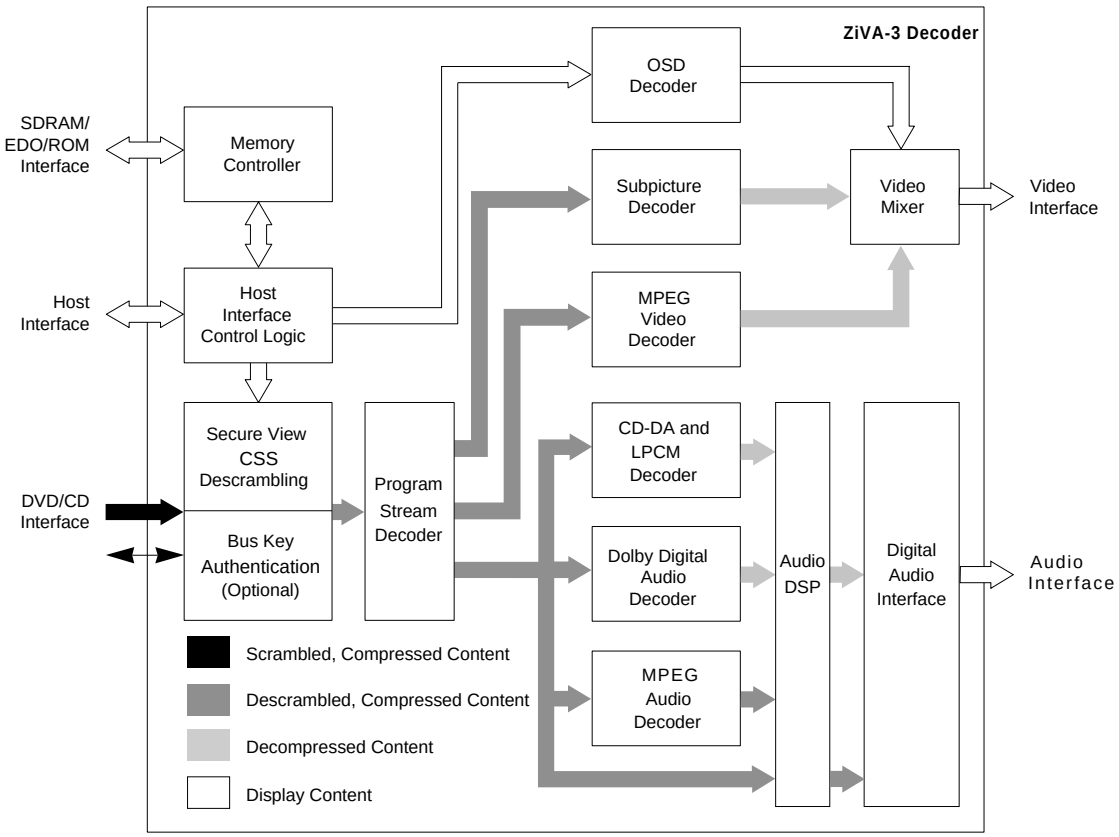
BLOCK DIAGRAM



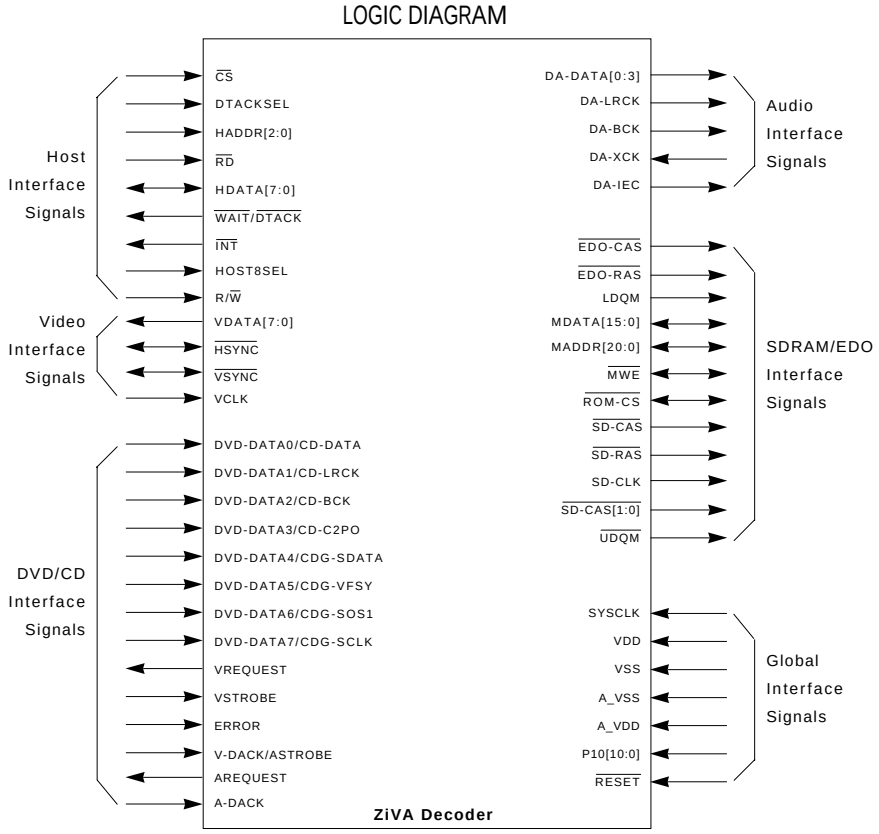
NAME	FUNCTION
A0-A8	Address Inputs
DQ0-15	Data in/Out
VSS	Ground
$\overline{RAS}$	Row Address Strobe
$\overline{UCAS}$	Upper Column Address Strobe
$\overline{LCAS}$	Lower Column Address Strobe
$\overline{W}$	Read/Write Input
$\overline{OE}$	Data Output Enable
V_{cc}	Power (+5V)
	Power (+3.3V)
N.C	No Connection

2-1-6 VIC1 (ZiVA-3 ; Audio/Video Decoder)

BLOCK DIAGRAM

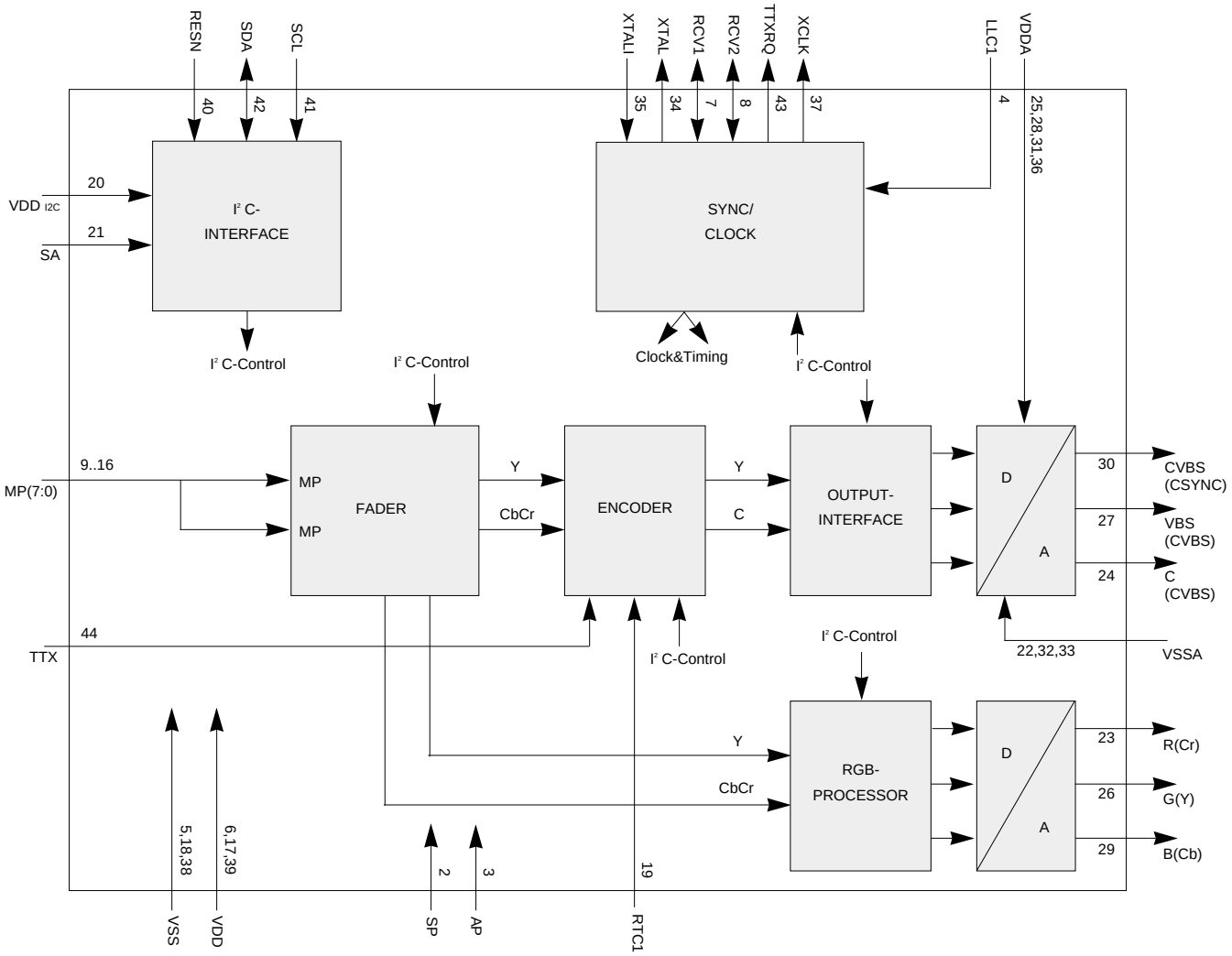


LOGIC DIAGRAM



2-1-7 VIC50 (SAA7128 ; Digital Video Encoder)

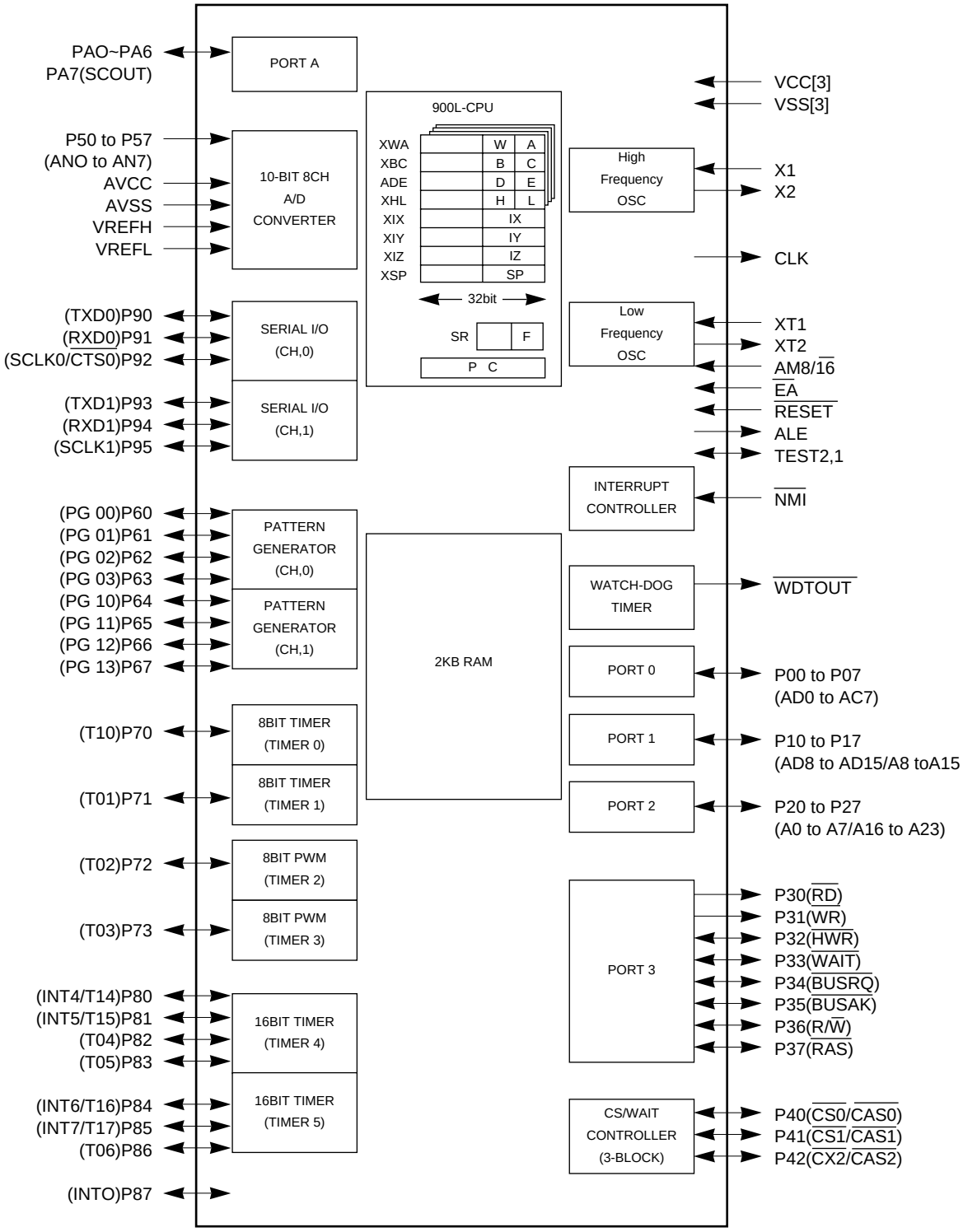
BLOCK DIAGRAM



PIN	I/O	NAME	FUNCTION
1		res.	Reserved pin, do not connect
2	I	SP	Test Pin;connected to digital ground for normal operation
3	I	AP	Test Pin;connected to digital ground for normal operation
4	I	LLC1	Line-Locked Clock input;this is the 27 MHz master clock
5	I	V_{SS1}	Digital supply ground 1
6	I	V_{DD1}	Digital supply 1
7	I/O	RCV1	Raster Contral 1 for video port. This pin receives/provides a VS/FS/FSEQ signal.
8	I/O	RCV2	Raster Contral 2 for video port. This pin provides an HS pulse of programmable length or receives an HS pulse.

PIN	I/O	NAME	FUNCTION
9	I	MP7	Double speed 54 MHzMPEG port. It is an input for "CCIR 656" style multiplexed Cb, Y, Cr data. Data are sampled on the rising and falling clock edge;data sampled on the risting edge then are sent to the encoding part of the device, data sampled on the falling edge are sent to the RGB part of the device. (or vice verse, depending on programming)
10	I	MP6	
11	I	MP5	
12	I	MP4	
13	I	MP3	
14	I	MP2	
15	I	MP1	
16	I	MP0	
17	I	V_{DD2}	Digital supply voltage 2
18	I	V_{SS2}	Digital ground 2
19	I	RTCI	Real Time Control input. If the LLC1 clock is provided by an SAA7111 or SAA7151B, RTCI should be connected to the RTCO pin of the respective decoder to improve the signal quality.
20	I	VDD_{12C}	Sense input for 12C bus voltage;connect to 12C bus supply
21	I	SA	Select 12C address; low selects slave address 88h, high selects slave address 8Ch.
22	I	V_{SSA1}	Analog ground 1 for Red (Cr), C(CVBS), Green(Y) outputs
23	O	R(Cr)	Analog output of Red (Cr)signal
24	O	C	Analog output of Chrominance (CVBS) signal
25	I	V_{DDA1}	Analog supply voltage 1 for R(Cr), C(CVBS) outputs
26	O	G(Y)	Analog output of Green(Y) signal
27	O	VBS	Analog output of VBS (CVBS) signal
28	I	V_{DDA2}	Analog supply voltage 2 for VBS(CVBS), Green(Y) outputs
29	O	B(Cb)	Analog output of Blue(Cb) signal
30	O	CVBS	Analog output of CVBS(CSYNC) signal
31	I	V_{DDA3}	Analog supply voltage 3 for Blue(Cb)and CVBS(CSYNC), outputs
32	I	V_{SSA2}	Analog ground 2 for VBS (CVBS), Blue(Cb), CVBS(CSYNC)outputs
33	I	V_{SSA3}	Analog ground 3 for the DAC reference ladder and the oscillator
34	O	XTAL	Crystal oscillator output
35	I	XTAL1	Crystal oscillator input; if the oscillator is not used, this pin should be connected to ground.
36	I	V_{DDA4}	Analog supply voltage 4 for the DAC reference ladder and the oscillator
37	O	XCLK	Clock output of the crystal oscillator
38	I	V_{SS3}	Digital supply ground 3
39	I	V_{DD3}	Digital supply 3
40	I	RESN	Reset input, active LOW. After reset is applied, all digital I/Os are in input mode; PAL-Blackburst on CVBS, VBS and C;RGB outputs set to lowest voltage. The 12C-bus receiver waits for the START condition.
41	I	SCL	12C serial clock input
42	I/O	SDA	12C serial data input/output
43	O	TTXRQ	Teletext Request output, indicating when text bits are requested
44	I	TTX	Teletext bit stream input

2-1-8 MIC1 (TMP93CM41F ; Main Micom)



No	PORT NAME	ASSIGNED NAME	I/O	FUNCTION
1	VREFL	GND	I	A/D Ref input (L)
2	AVss	AGND	-	A/D GND input
3	AVcc	AVCC	-	A/D VCC input
4	/NMI	-	I	Non-maskable interrupt
5	P70	ZRST	O	DSP H/W reset
6	P71	-	O	-
7	P72	ZIVA_RST	O	AV-DEC H/W reset
8	P73	-	O	-
9	/INT4	DVDINT	I	Interrupt from AV-DEC
10	INT5	SRQ	I	Interrupt from front micom
11	P82	DRST1	I	DAC rest1
12	P83	PLL CTL	I	PLL control
13	/INT6	FGINT	I	Interrupt from spindle motor FG
14	INT7	-	I	-
15	P86	RRQ	O	Request to front micom
16	INTO	ZINT	I	Interrupt from DSP
17	TXDO	RXD	O	Serial data output
18	RXDO	TXD	I	Serial data input
19	SCLKO	SCLK	I	Serial data clock
20	TXD1	MD	O	RF control data
21	094	STB	I/O	RF data latch
22	SCLK1	MC	O	RF control clock
23	AM8/16	AM8	I	Address mode (H: 8 bit mode)
24	CLK	CLK	O	Clock output (System clock÷2)
25	Vcc	VCC	-	
26	Vss	GND	-	GND
27	X1	X1	I	High frequency OSC in
28	X2	X2	O	High frequency OSC out
29	/EA	/EA	I	External access CS41/CS40
30	/RESET	/MRST	I	Master reset from FRONT

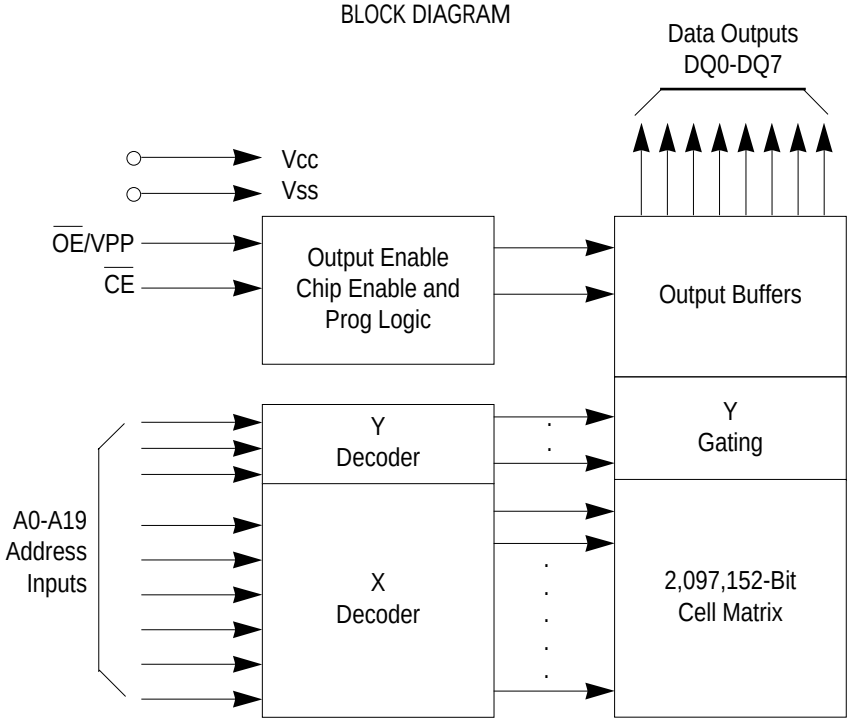
No	PORT NAME	ASSIGNED NAME	I/O	FUNCTION
31	P96	XT1	O	-
32	P97	XT2	O	-
33	TEST1	TEST1	-	Test pin. connect to TEST2
34	TEST2	TEST2	-	Test pin. connect to TEST1
35	PA0	DFS	O	D/A control
36	PA1	DEMO0	I/O	D/A control
37	PA2	DEMO1	O	D/A control
38	PA3	DIF0	O	D/A control
39	PA4	DIF2	O	D/A control
40	PA5	DRST	O	DAC REST
41	PA6	AMUT0	O	Front MUTE
42	PA7	-	O	-
43	ALE	ALE	O	Address latch enable
44	Vcc	VCC	-	
45	AD0	HAD0	I/O	Address/Data 0
46	AD1	HAD1	I/O	Address/Data 1
47	AD2	HAD2	I/O	Address/Data 2
48	AD3	HAD3	I/O	Address/Data 3
49	AD4	HAD4	I/O	Address/Data 4
50	AD5	HAD5	I/O	Address/Data 5
51	AD6	HAD6	I/O	Address/Data 6
52	AD7	HAD7	I/O	Address/Data 7
53	A8	HA8	O	Address 8
54	A9	HA9	O	Address 9
55	A10	HA10	O	Address 10
56	A11	HA11	O	Address 11
57	A12	HA12	O	Address 12
58	A13	HA13	O	Address 13
59	A14	HA14	O	Address 14
60	A15	HA15	O	Address 15

No	PORT NAME	ASSIGNED NAME	I/O	FUNCTION
61	/WDTOUT	WDTOUT	O	Watch dog timer output
62	VSS	GND	-	
63	Vcc	VCC	-	
64	A16	HA16	O	Address 16
65	A17	HA17	O	Address 17 (AV-DECODER)
66	A18	HA18	O	Address 18 (Data processor)
67	A19	HA19	O	Address 19
68	A20	HA20	O	Address 20 (D. SERVO)
69	A21	HA21	O	-
70	A22	HA22	O	-
71	A23	HA23	O	Address 23
72	/RD	/RD	O	/Read strobe
73	/WR	/WR	O	/Write strobe
74	P32	-	I/O	
75	/WAIT	/MWAIT	I	/Wait
76	P34	RCODE	I/O	
77	P35	BUSAK	I/O	DVD/CD
78	P36	R/*W	O	EDT
79	P37	RAS	I/O	ECK
80	P40/CS0	-	O	-
81	/CS1	/CS1	-	Chip select 1 (SRAM, 1M Bit, 128KB)

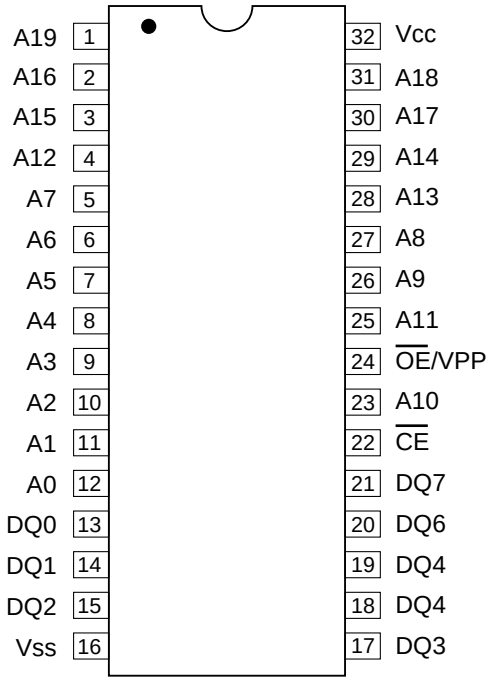
No	PORT NAME	ASSIGNED NAME	I/O	FUNCTION
82	/CS2	/CS2	O	Chip slect 2 (EPROM, 4M Bit, 512KB)
83	P60	DIF	I/O	D/A control
84	P61	-	O	-
85	P62	-	O	-
86	P63	SCL	O	IIC clock (VIDEO ENCODER)
87	P64	SDA	I/O	IIC clock (VIDEO ENCODER)
88	P65	DAB	O	D.Servo IC data/Address select
89	P66	CSB	O	D.Servo IC chip select
90	P67	RSTB	O	D.Servo IC reset
91	Vss	GND	-	
92	P50	SLOCK		LOCK monitor from DSP
93	P51	TILTO	I	Monitor signal
94	P52	FR	I	Spindle direction from SP driver
95	P53	SENSE	I	SENSE monitor from SERVO
96	P54	FOKB	I	Focus lock monitor from RF
97	P55	RFRP1	I	Tracking lock monitor from SERVO
98	P56	RFO	I	RF sum signal
99	P57	VREFO	I	
100	VREFH	AVCC	I	A/D Ref input (H)

2-1-9 MIC8 (M27C801 ; 8MB (1M x 8-bit) CMOS EPROM)

BLOCK DIAGRAM



TOP VIEW



NAME	FUNCTION
A0-A19	Address Inputs
$\overline{CE}$	Chip Enable Input
DQ0-DQ7	Data Input/Outputs
$\overline{OE}$	Output Enable Input
Vcc	Vcc Syply Voltage
Vss	Ground

2-1-10 FIC2 (LC866232 ; Front Micom)

No	PORT NAME	ASSIGNED NAME	I/O	FUNCTION
1	P52	MRST	O	Front end reset
2	PWM1	-	-	-
3	P20	-	-	-
4	P21	-	-	-
5	P22	-	-	-
6	P23	-	-	-
7	P24	-	-	-
8	P25	-	-	-
9	P26	-	-	-
10	P27	-	-	-
11	TEST1	-	-	-
12	*RES		I	Reset
13	XT1	GND		Low frequency OSC in
14	XT2	-		Low frequency OSC out
15	VSS	GND		
16	CF1	-		High frequency OSC in
17	CF2	-		High frequency OSC out
18	VDD	VDD		
19	AN0/P80	-		GND
20	AN1/P81	-		GND
21	AN2/P82	-		-
22	AN3/P83	MODE0	I	HARDWARE MODE SELECT
23	AN4/P84	MODE1	I	HARDWARE MODE SELECT
24	AN5/P85	MODE2	I	HARDWARE MODE SELECT
25	AN6/P86	MODE3	I	HARDWARE MODE SELECT
26	AN7/P87	MODE4	I	HARDWARE MODE SELECT
27	P70/INT0	RRQ	I	Request to front micom
28	P71/INT1	-	I	Roulette sensor
29	P72/INT2	-	I	
30	P73/INT3	REMCOCN	I	REMCOCN data in

No	PORT NAME	ASSIGNED NAME	I/O	FUNCTION
31	S0/T0	GRID11	O	FLT GRID CONTROL
32	S1/T1	GRID10	O	FLT GRID CONTROL
33	S2/T2	GRID9	O	FLT GRID CONTROL
34	S3/T3	GRID8	O	FLT GRID CONTROL
35	S4/T4	GRID7	O	FLT GRID CONTROL
36	S5/T5	GRID6	O	FLT GRID CONTROL
37	S6/T6	GRID5	O	FLT GRID CONTROL
38	S7/T7	GRID4	O	FLT GRID CONTROL
39	S8/T8	GRID3	O	FLT GRID CONTROL
40	S9/T9	GRID2	O	FLT GRID CONTROL
41	S10/T10	GRID1	O	FLT GRID CONTROL
42	S11/T11	-	-	-
43	S12/T12	SEG1	O	FLT SEGMENT CONTROL
44	S13/T13	SEG2	O	FLT SEGMENT CONTROL
45	S14/T14	SEG3	O	FLT SEGMENT CONTROL
46	S15/T15	SEG4	O	FLT SEGMENT CONTROL
47	VDD	+5V	-	
48	VP	-28V	-	
49	S16	SEG5	O	FLT SEGMENT CONTROL
50	S17	SEG6	O	FLT SEGMENT CONTROL
51	S18	SEG7	O	FLT SEGMENT CONTROL
52	S19	SEG8	O	FLT SEGMENT CONTROL
53	S20	SEG9	O	FLT SEGMENT CONTROL
54	S21	SEG10	O	FLT SEGMENT CONTROL
55	S22	SEG11	O	FLT SEGMENT CONTROL
56	S23	SEG12	O	FLT SEGMENT CONTROL
57	S24	SEG13	O	FLT SEGMENT CONTROL
58	S25	SEG14	O	FLT SEGMENT CONTROL
59	S26	SEG15	O	FLT SEGMENT CONTROL
60	S27	SEG16	O	FLT SEGMENT CONTROL

No	PORT NAME	ASSIGNED NAME	I/O	FUNCTION
61	S28	SEG17	O	FLT SEGMENT CONTROL
62	S29	SEG18	O	FLT SEGMENT CONTROL
63	S30	SEG19	O	FLT SEGMENT CONTROL
64	S31	SEG20	O	FLT SEGMENT CONTROL
65	P00	KEY0	I	KEY SCAN
66	P01	KEY1	I	KEY SCAN
67	P02	KEY2	I	KEY SCAN
68	P03	KEY3	I	KEY SCAN
69	P04	KEY4	O	KEY SCAN
70	P05	KEY5	O	KEY SCAN
71	P06	-		GND
72	P07	-	-	-
73	P10/SI00	TXD	O	SERIAL DATA OUT
74	P11/SI10	RXD	I	SERIAL DATA IN
75	P12/SCK0	SCLK	O	SERIAL CLOCK
76	P13/SI01	SRQ		Request to Main Micom
77	P14/S11	-	-	-
78	P15/SCK1	-	-	-
79	P16/BUZ	-	-	-
80	P17/PWM0	-	-	-

No	PORT NAME	ASSIGNED NAME	I/O	FUNCTION
81	P30	OP SW	I	TRAY OPEN SW
82	P31	CL SW	I	TRAY XLOSE SW
83	P32	SW1	I	ROULETTE SW1
84	P33	SW2	I	ROULETTE SW2
85	P34	J1	I	JOG DATA
86	P35	J2	I	JOG DATA
87	P36	AT	I	TV TYPE
88	P37	AD	I	TV TYPE
89	GND	GND	-	-
90	VDD	+5V	-	
91	P40	RGBCTL	O	SCART CONTROL
92	P41	SCON_B	O	SCART CONTROL
93	P42	-	O	
94	P43	WIDE	O	SCART CONTROL
95	P44	MR	O	MOTOR R
96	P45	ML	O	MOTOR L
97	P46	DS	O	DISC SENSOR
98	P47	LED	O	JOG LED
99	P50	LED	O	STANDBY LED
100	P51	ON/OFF	O	POWER ON/OFF CONTROL

MEMO

3. Product Specifications

NTSC

GENERAL	Power Requirements	AC 120V, 60Hz
	Power Consumption	20W
	Weight	15.4lbs
	Dimensions	W 10.2 in X D 16.3 in X H 4.4 in
	Operating Temperature Range	+41°F ~ +95°F
	Operating Humidity Range	10% to 75%
DISC	DVD (Digital Versatile Disc)	Reading Speed : 11.45 ft/sec.
		Approx. Play Time (Single Sided, Single Layer Disc) : 135 min.
	CD : 5 inches (Compact Disc)	Reading Speed : 3.9 to 4.6 ft/sec.
		Maximum Play Time : 74min.
	CD : 3 1/2 inches (Compact Disc)	Reading Speed : 3.9 to 4.6 ft/sec.
		Maximum Play Time : 20min.
	VCD : 5 inches	Reading Speed : 3.9 to 4.6 ft/sec.
		Maximum Play Time : 74min. (Video + Audio)
Video Output	Composite Video	2 Channel : 1.0Vp-p (75ohm load)
	Component Video	Y : 1.0Vp-p (75ohm load)
		Pr : 0.70Vp-p (75ohm load)
		Pb : 0.70Vp-p (75ohm load)
	S-Video	Luminance Signal : 1.0Vp-p (75ohm load)
		Color Signal : 0.286Vp-p (75ohm load)
Audio Output	2 channel	L (1/L), R (2/R)
	Output Level	Analog : 2Vrms (1KHz)
		Digital : 1.15Vp-p
	* Frequency Response	48KHz Sampling : 4Hz to 22 KHz
		96KHz Sampling : 4Hz to 44KHz
	* S/N Ratio	110dB
	* Dynamic Range	96dB
	* Total Harmonic Distortion	0.003%

* : Nominal specification

P A L

GENERAL	Power Requirements	AC 110V ~ 240V, 50/60Hz
	Power Consumption	20W
	Weight	9.8Kg
	Dimensions	W 525mm X D 510mm X H 230mm
	Operating Temperature Range	+5°C ~ 35°C
	Operating Humidity Range	10% ~ 75%
DISC	DVD (Digital Versatile Disc)	Reading Speed : 3.49m/sec.
		Approx. Play Time (Single Sided, Single Layer Disc) : 135 min.
	CD : 12cm (Compact Disc)	Reading Speed : 1.2 to 1.4m/sec.
		Maximum Play Time : 74min.
	CD : 8cm (Compact Disc)	Reading Speed : 1.2 to 1.4m/sec.
		Maximum Play Time : 20min.
	VCD : 12cm	Reading Speed : 1.2 to 1.4m/sec.
		Maximum Play Time : 74min. (Video + Audio)
Video Output	Scart Jack	R (Red) : 0.714Vp-p (75ohm load)
		G (Green) : 0.714Vp-p (75ohm load)
		B (Blue) : 0.714Vp-p (75ohm load)
		Composite Video : 1.0Vp-p (75ohm load)
		Luminance Signal : 1.0Vp-p (75ohm load)
		Color Signal : 0.286Vp-p (75ohm load)
	Component Video	2 Channel : 1.0Vp-p (75ohm load)
	S-Video	Luminance Signal : 1Vp-p (75ohm load)
		Color Signal : 0.286Vp-p (75ohm load)
Audio Output	Scart Jack	2 Channel : L (1/L), R (2/R)
	RCA-Jack	2 Channel : L (1/L), R (2/R)
	Output Level	Analog : 2Vrms (1KHz)
		Digital : 1.15Vp-p
	* Frequemvy Response	48KHz Sampling : 4Hz to 22KHz
		96KHz Sampling : 4Hz to 44KHz
	* S/N Ratio	110dB
	* Dynamic Range	96dB
	* Total Harmonic Distortion	0.003%

* : Nominal specification

4. Disassembly and Reassembly

4-1 Cabinet and PCB

Note : Reassembly in reverse order.

4-1-1 Door-Tray Removal

1) Supply power and open Tray ❶.
2) Lift up the Door-Tray ❷ in the direction of arrow “A” by both hand to remove.
3) Close Tray ❶ and power off.

Note : If Tray ❶ doesn’t open, insert a Screw driver ❹ into the Emergency hole ❸ (as shown in detailed drawing) and then turn it in the direction of arrow “B”. Open Tray manually.

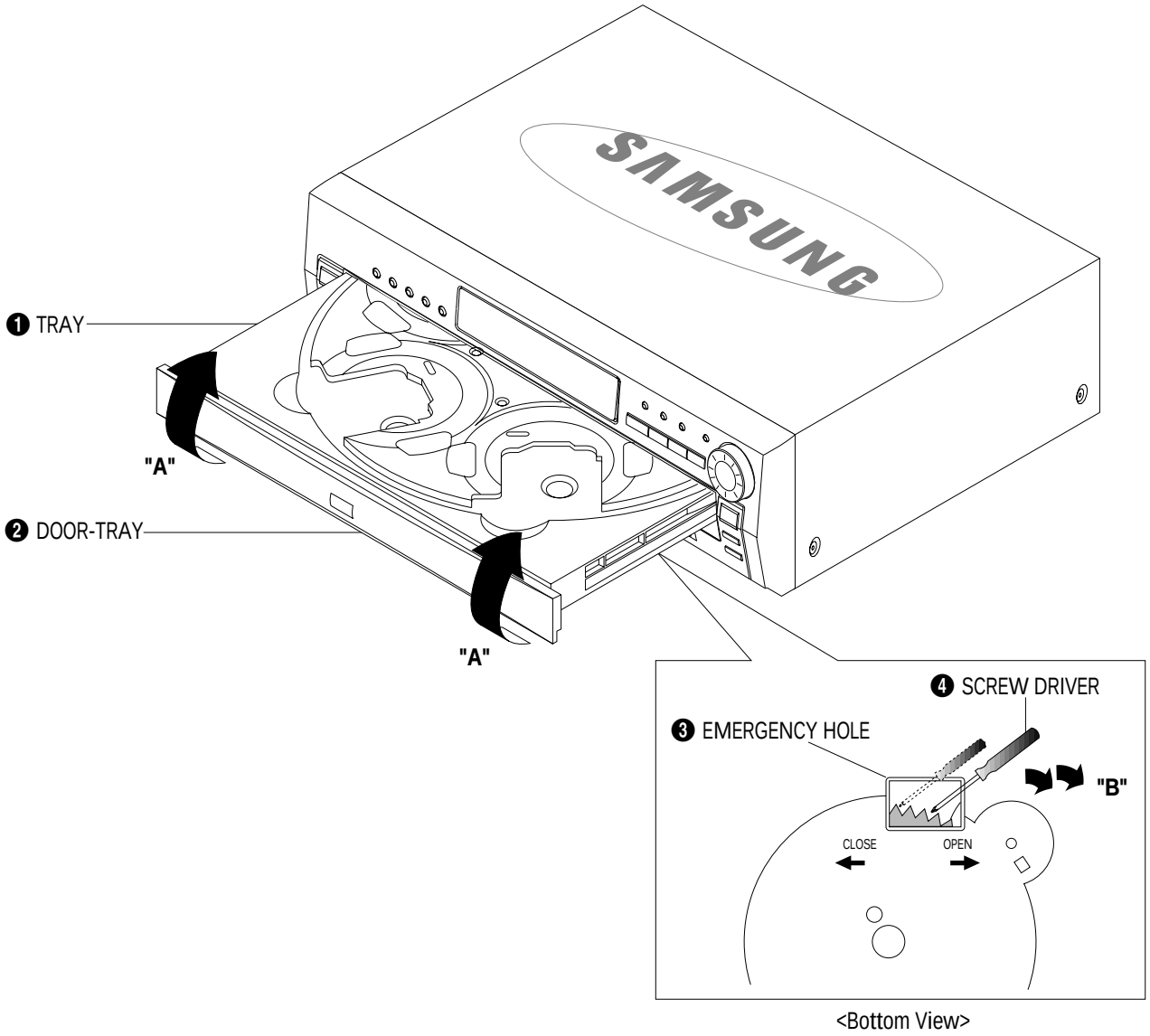


Fig. 4-1 Door-Tray Removal

4-1-2 Top Cabinet Removal

1) Remove 5 Screws ❶ on the back Top Cabinet.
2) Remove 4 Screws ❷, ❸ on the left and right side.
3) Lift up the Top Cabinet in direction of arrow.

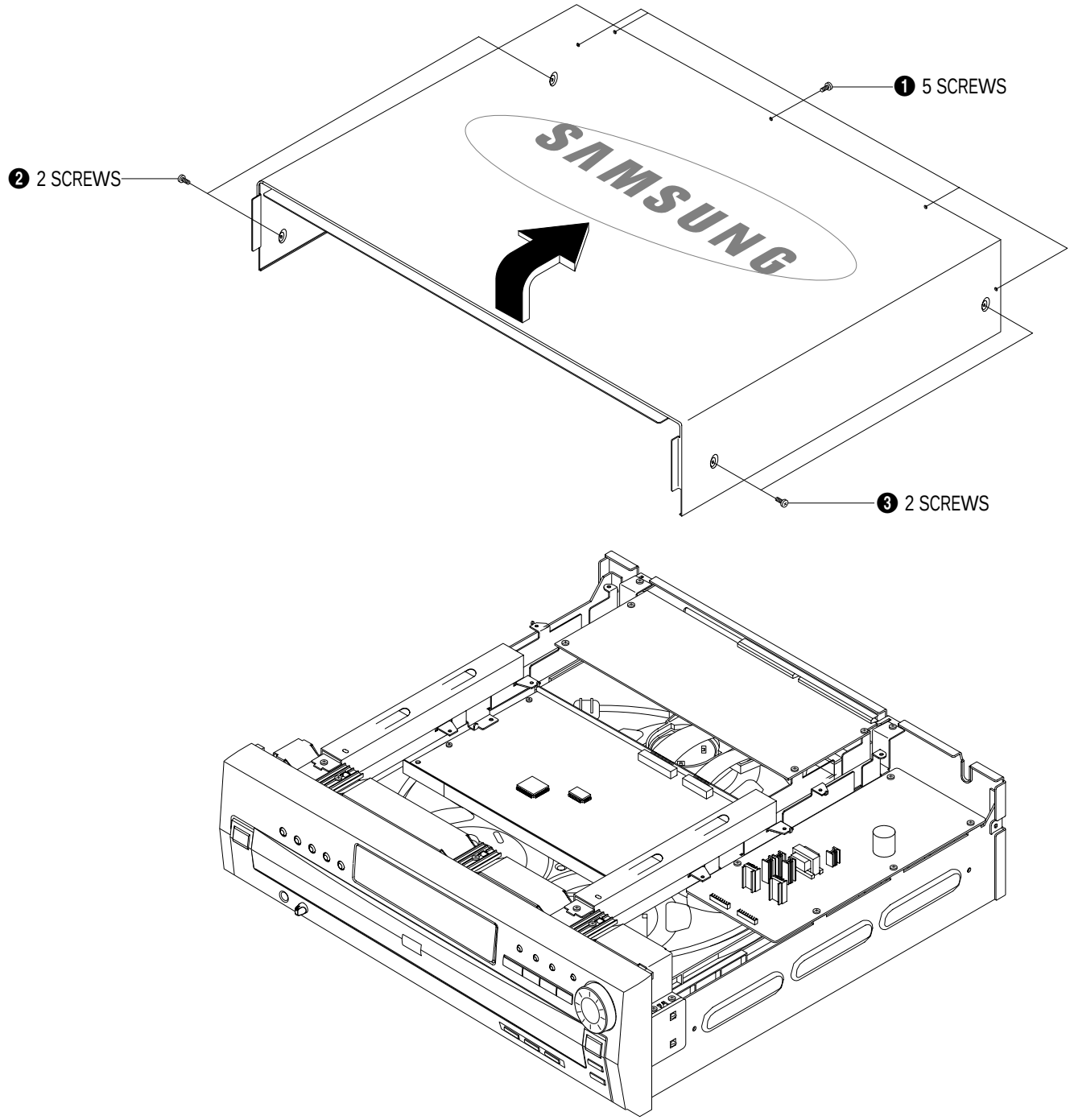


Fig. 4-2 Top Cabinet Removal

4-1-3 Ass'y Front-Panel, Front PCB, Headphone PCB Removal

1) Remove 2 Screws ❶ and disassemble the Ass'y Front Panel ❷.
2) Remove Knob-Shuttle ❸.
3) Remove 11 Screws ❹, ❺ and disassemble the Front PCB ❻.
4) Remove 2 Screws ❼ and disassemble the Headphone PCB ❽.

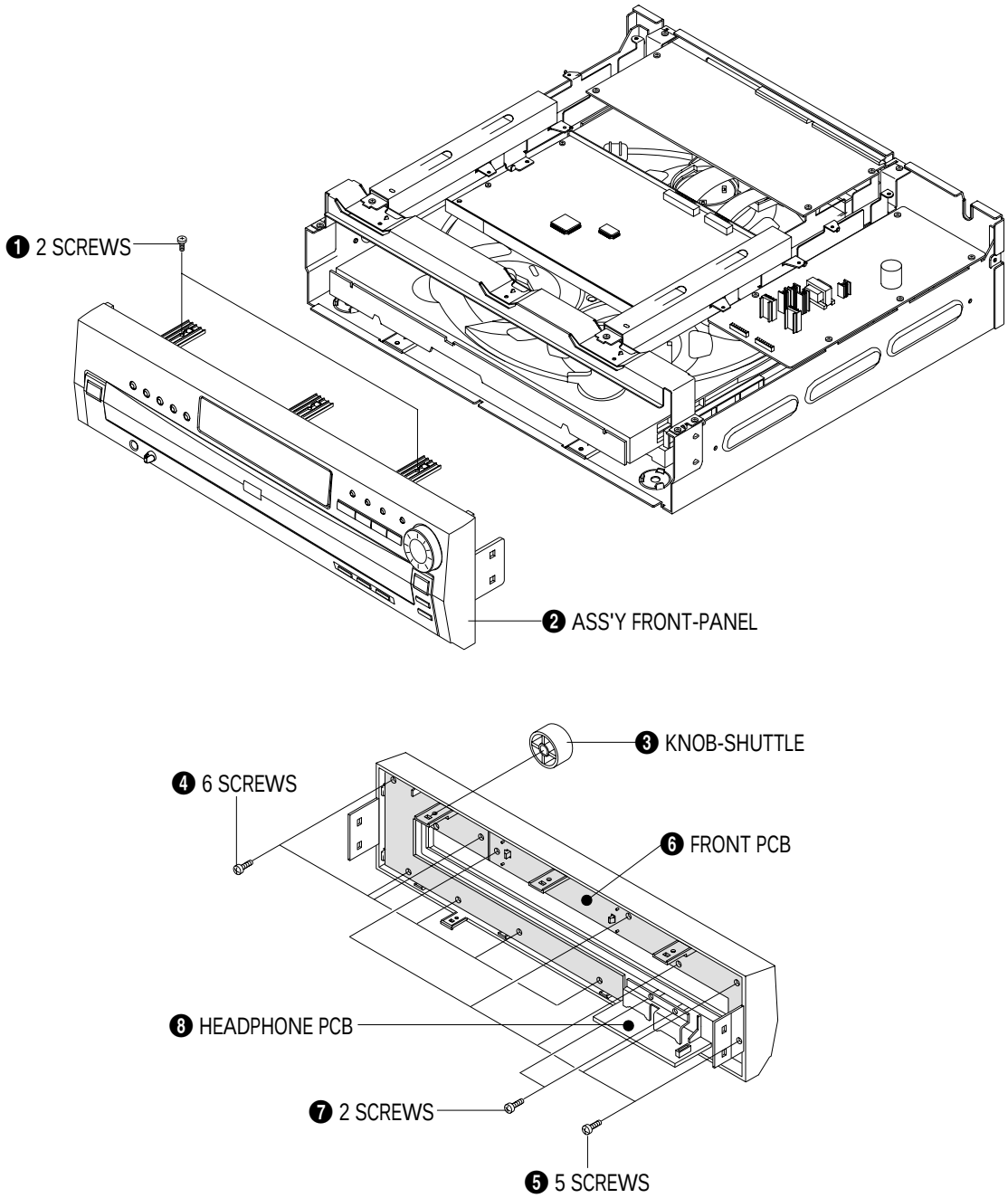


Fig. 4-3 Ass'y Front-Panel, Front PCB, Headphone PCB Removal

4-1-4 Main PCB, Jack PCB, S.M.P.S. Removal

1) Remove 2 Screws (4 Screws ; Region - Europe) ❶.
2) Remove 3 Screws ❷ and lift the Jack PCB ❸ up.

CAUTIONS ;
(1) When disassembling, switch the SW1 to "OFF" on the Deck PCB and remove the FPC connected to MCN06 on Main PCB. (See Fig.1-4 on page 1-6)
(2) When assembling, insert the FPC into the MCN06 on Main PCB and switch SW1 to "ON" on the Deck PCB. (See Fig.1-4 on page 1-6)

3) Disconnect FPC (Pin 36) from MCN06 on Main PCB ❺, remove 4 Screws ❹ and lift the Main PCB ❺ up.
4) Remove 4 Screws ❻, 1 Screw ❼ and lift the S.M.P.S. PCB ❽ up.

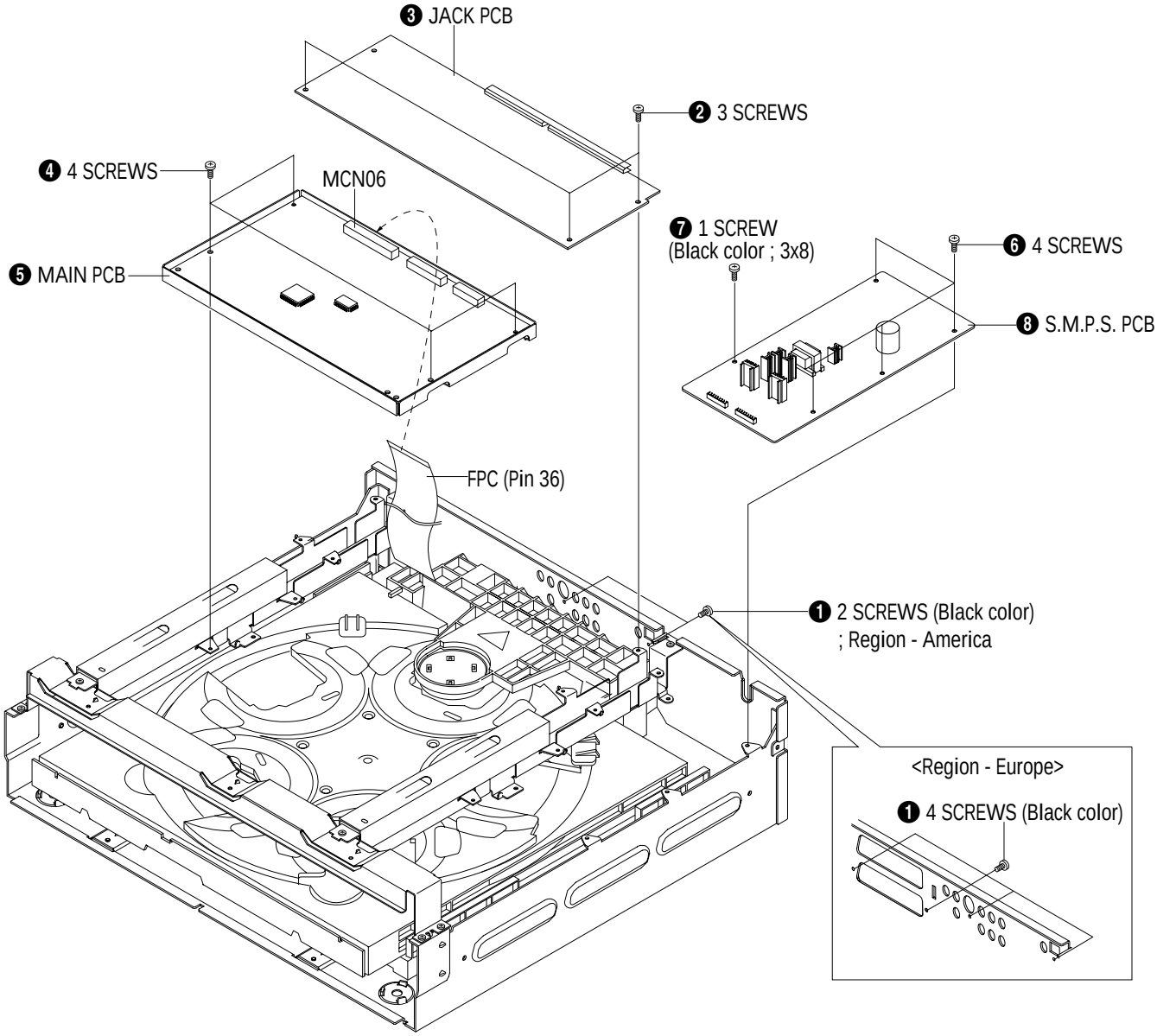


Fig. 4-4 Main PCB, Jack PCB, S.M.P.S. Removal

Wire Arrangement

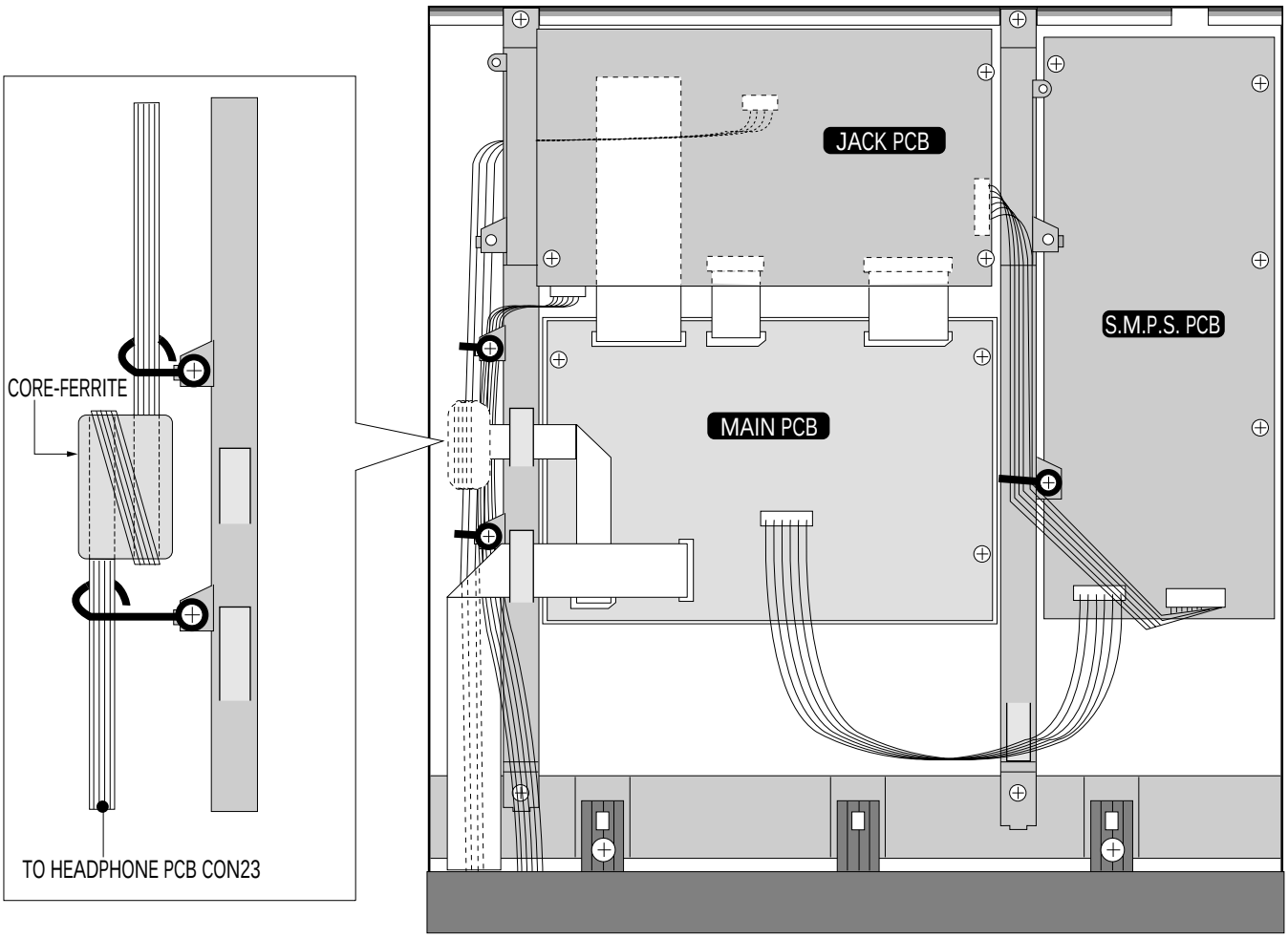


Fig. 4-5 Wire Arrangement (Top View)

4-1-5 Ass'y Deck Removal

1) Remove 4 Screws ❶, ❷ and Bracket-PCB ❸.
2) Remove 4 Screws ❹ from the Ass'y Deck and lift it up.

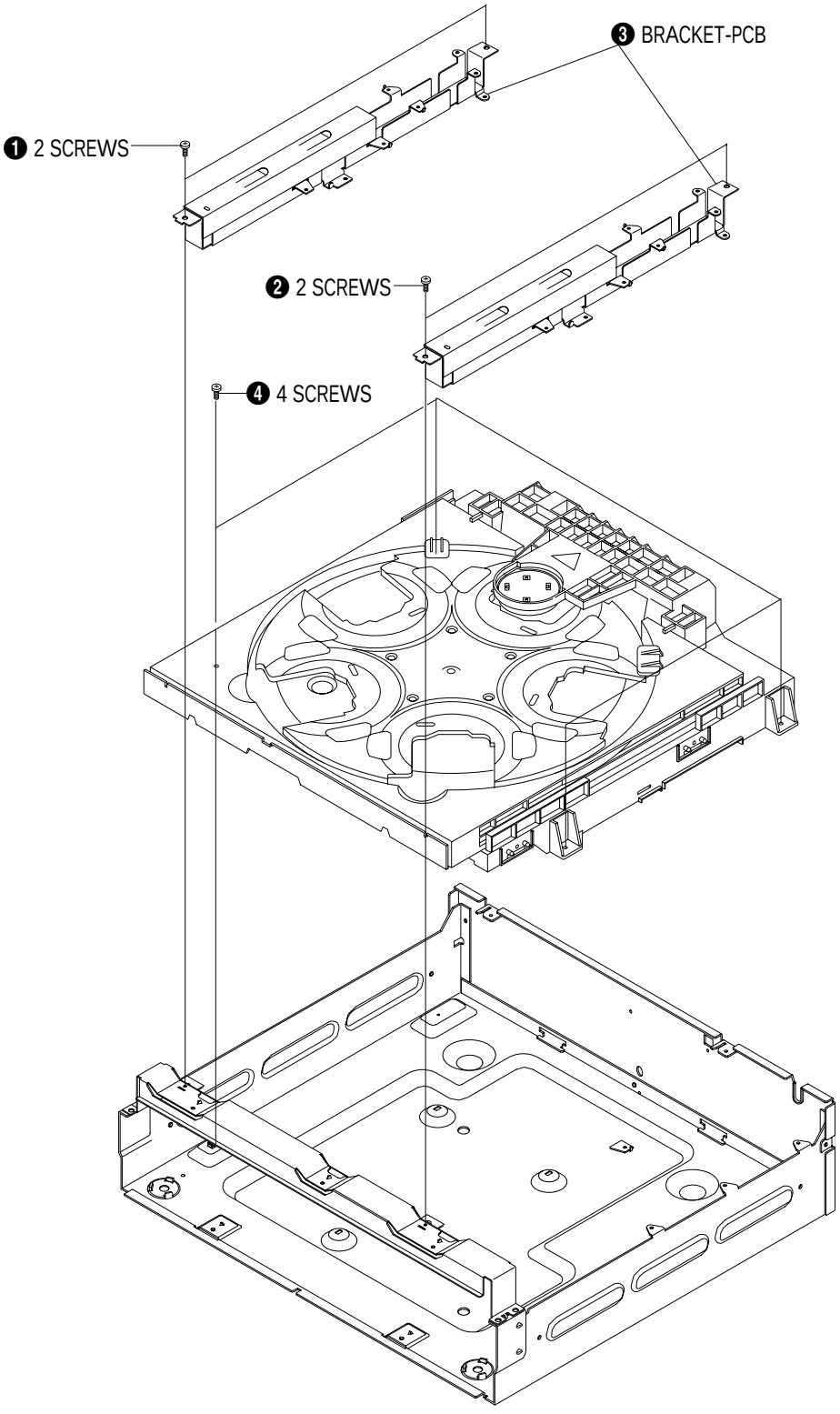


Fig. 4-6 Ass'y Deck Removal

4-2 PCB Location

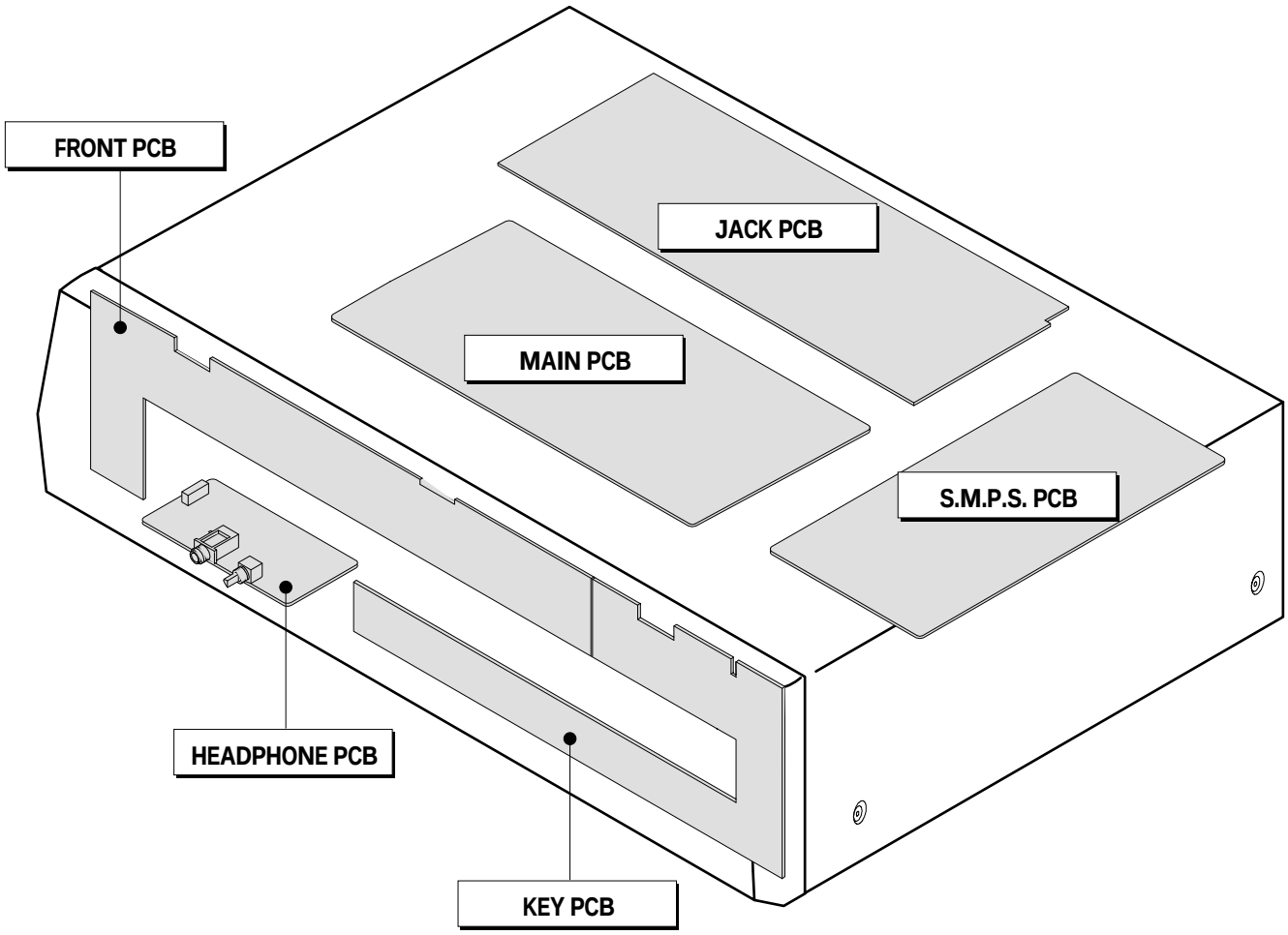
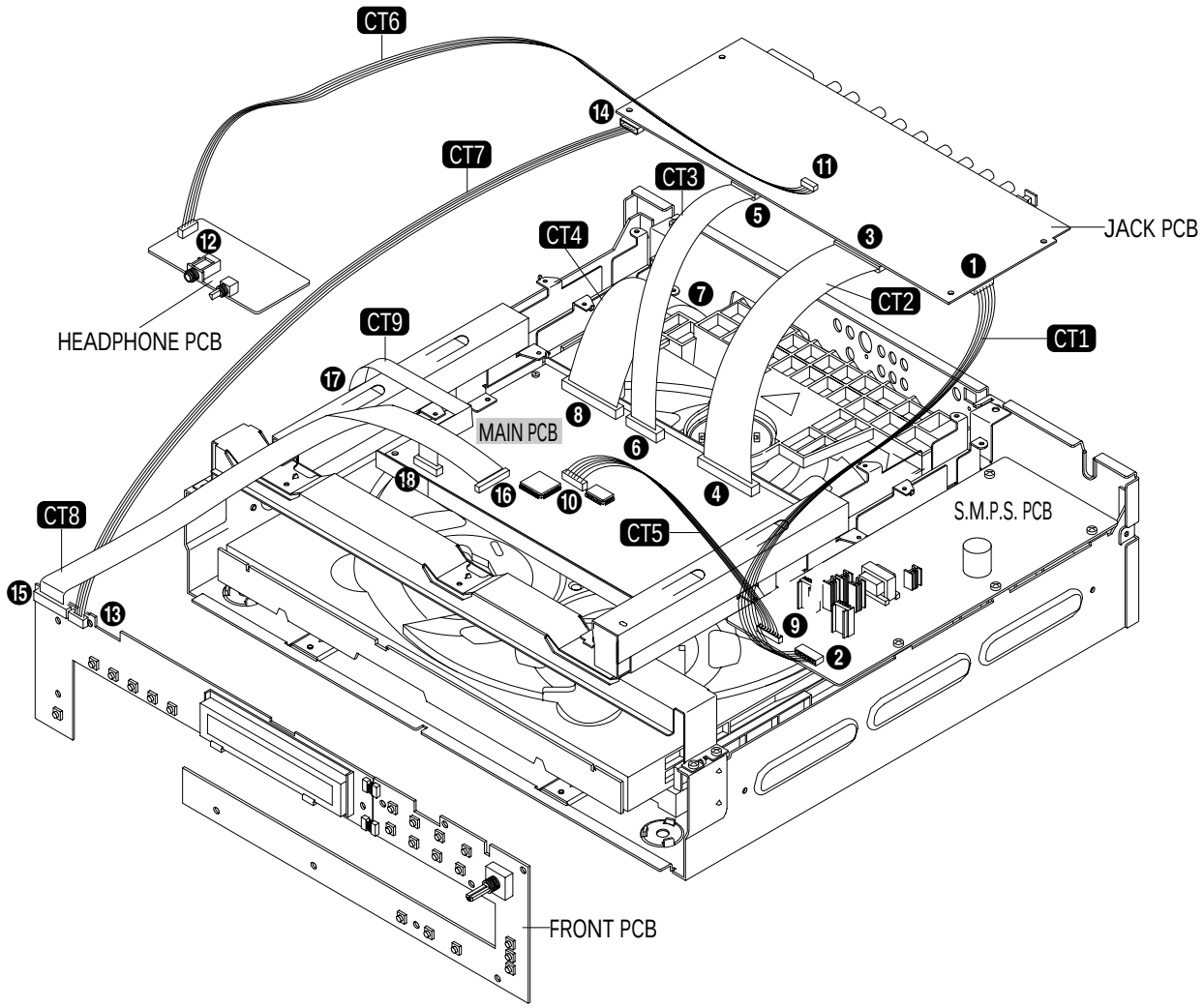


Fig. 4-7 PCB Location

4-3 Connector Diagram



NO.	CONNECTOR NO.	DIRECTION	CONNECTOR NO.	NO.
❶	JCN01	JACK PCB ◄ CT1 ► S.M.P.S. PCB	PCN02	❷
❸	JCN05	JACK PCB ◄ CT2 ► MAIN PCB	MCN03	❹
❺	JCN03	JACK PCB ◄ CT3 ► MAIN PCB	MCN02	❻
❼	CN5	DECK PCB ◄ CT4 ► MAIN PCB	MCN06	❽
❾	PCN03	S.M.P.S. PCB ◄ CT5 ► MAIN PCB	MCN01	❿
⓫	JCN04	JACK PCB ◄ CT6 ► HEADPHONE PCB	CON23	⓬
⓭	FCN01	FRONT PCB ◄ CT7 ► JACK PCB	JCN02	⓮
⓯	FCN04	FRONT PCB ◄ CT8 ► MAIN PCB	MCN04	⓰
⓱	TCN03	DECK PCB ◄ CT9 ► MAIN PCB	MCN05	⓲

Fig. 4-8 Connector Diagram

4-4 Deck

3-4-1 Tray Removal

CAUTIONS ;
1) When disassembling Deck Ass'y,
switch the SW1 to "OFF" on the Deck PCB and remove the FPC connected to MCN06 on Main PCB. (See Fig.1-4 on page 1-6)
2) When assembling Deck Ass'y,
insert the FPC into the MCN06 on Main PCB and switch SW1 to "ON" on the Deck PCB. (See Fig.1-4 on page 1-6)

1) Insert a Screw driver ❷ into Emergency hole ❶ and turn Gear Load ❸ in the direction of arrow "A".
2) When the Tray ❹ comes out a little, pull it in the direction of arrow "B" by hand.
3) Disconnect Flat Cable ❻.
4) Pull the Tray ❹ to disassemble, while simultaneously pushing the Stopper ❺, in direction of arrow "C".

CAUTION ; Do not stain with grease Pick-Up Lens, Turn table, Roulette Disc, Tray Disc, Belt.

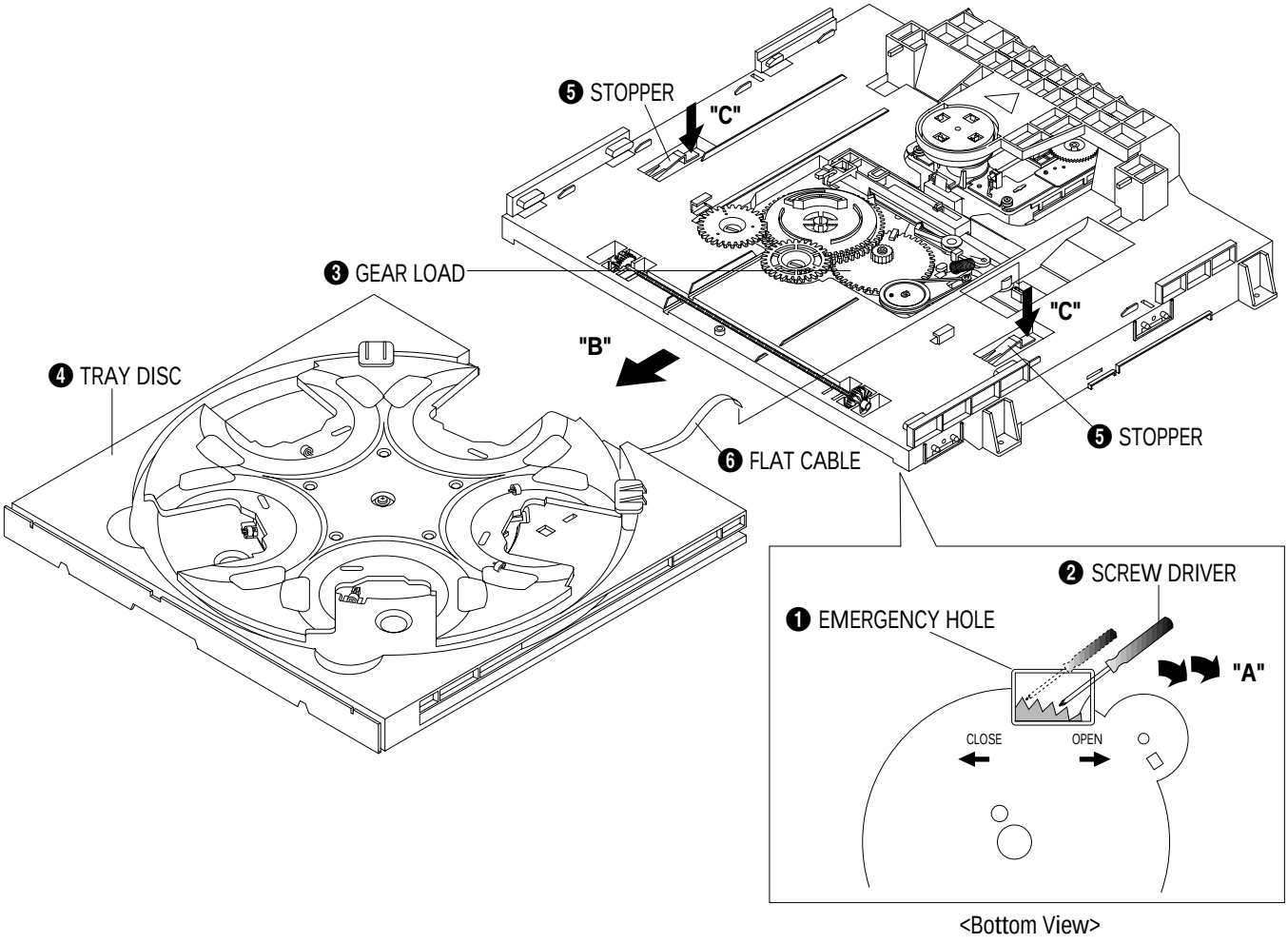


Fig. 4-9 Tray Removal

4-4-2 Tray Roulette Removal

1) Remove Screw ❶.
2) Lift up the Tray Roulette ❷.

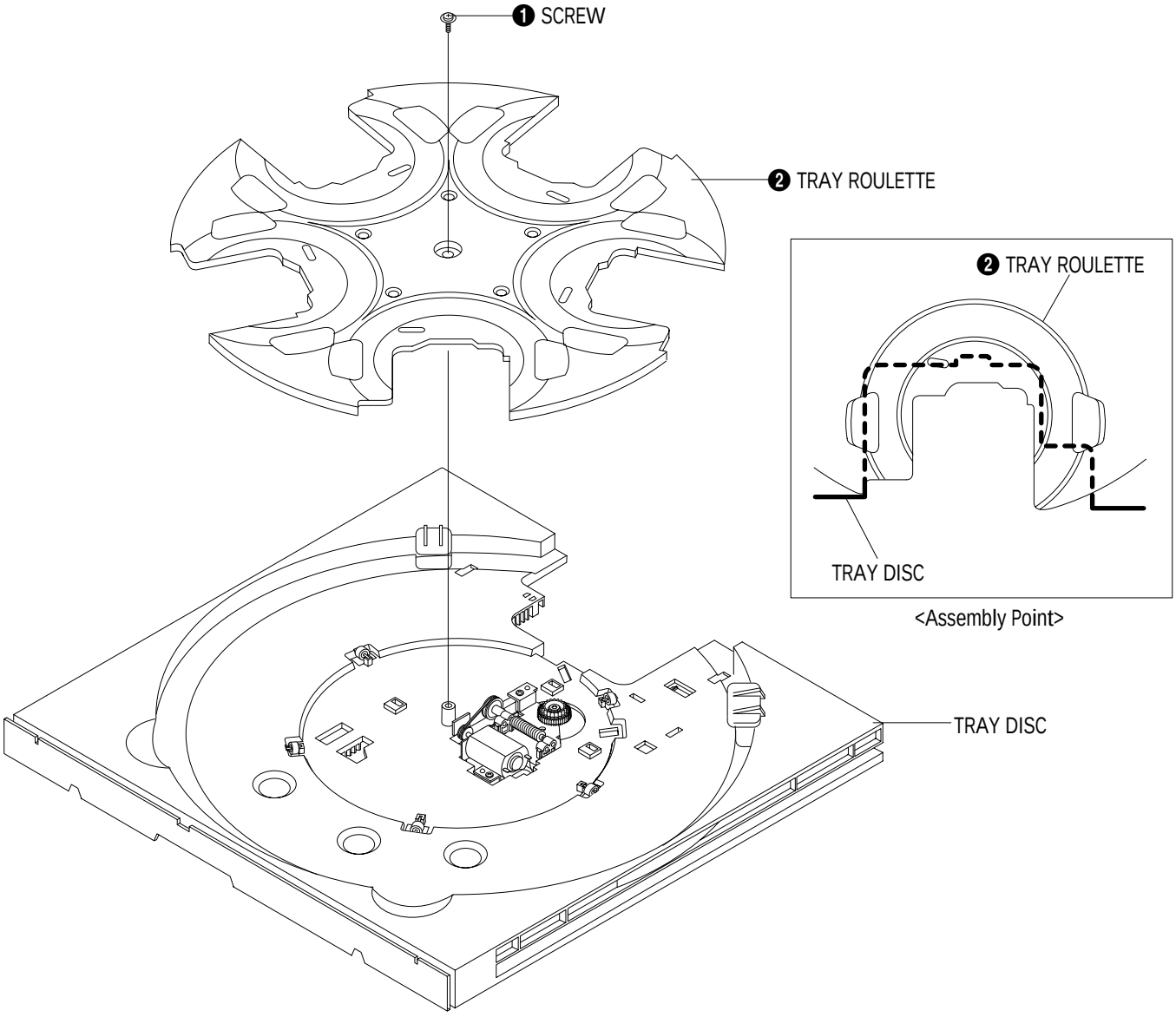


Fig. 4-10 Tray Roulette Removal

4-4-3 Bracket Worm Ass'y Removal

1) Disconnect LCN02 ❶ from Sensor PCB ❷.
2) Push the 4 Hooks ❸ in direction of arrow and remove the Sensor PCB ❷.
3) Remove 2 Screws ❹ and lift up the Bracket Worm Ass'y ❺.
4) Remove Belt ❻.
5) Remove Washer ❼ and the Gear Roulette ❽.
6) Remove 2 Screws ❾ and the Shaft Worm Ass'y ❿.
7) Remove 2 Screws ⓫ and the Worm Motor ⓬.

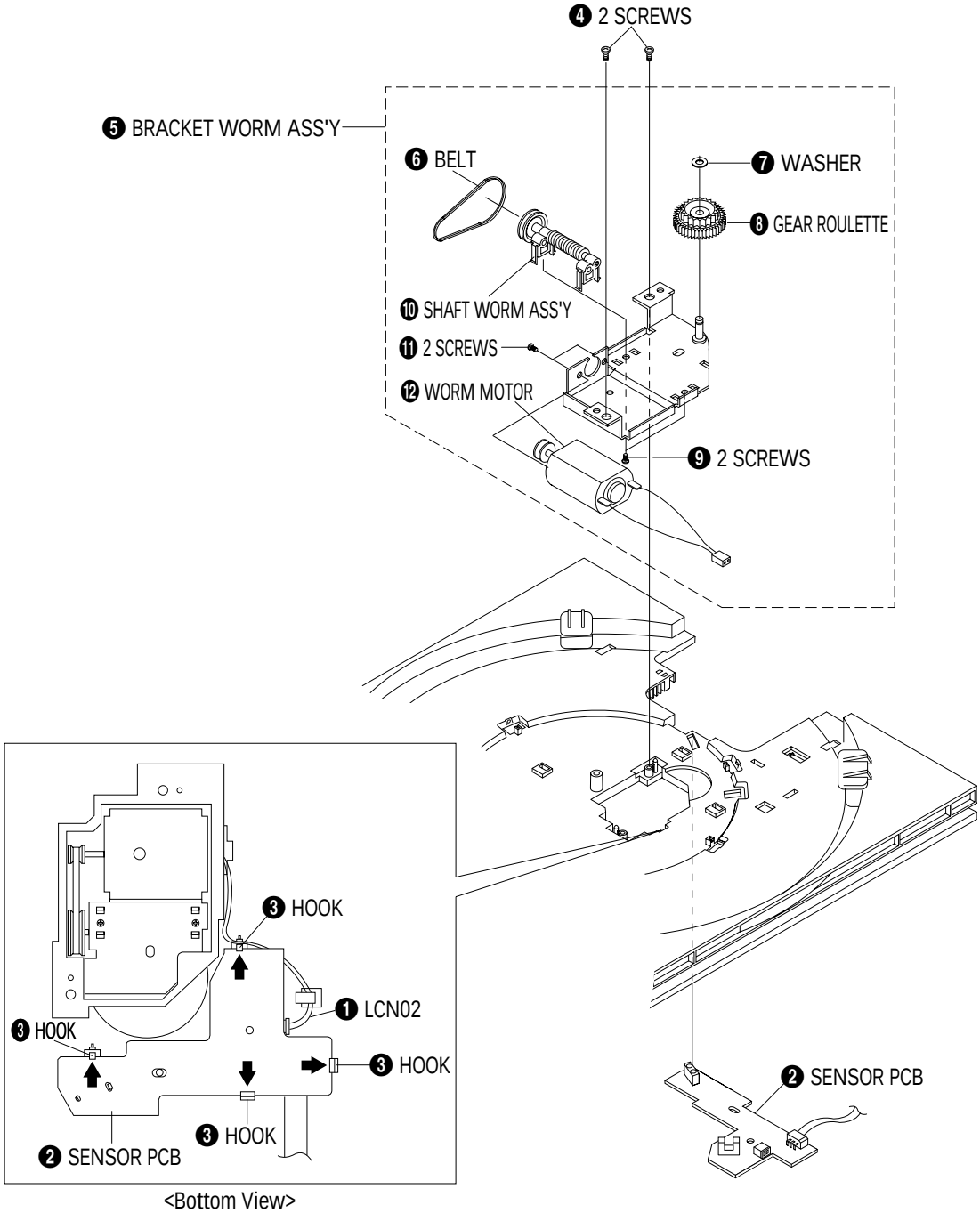


Fig. 4-11 Bracket Worm Ass'y Removal

4-4-4 Ass'y P/U Deck Removal

1) Remove Rubber Pad Protect ❶.
2) Insert a Screw driver ❸ into Emergency hole ❷ and turn Gear Load ❹ in the direction of arrow "A" so that Ass'y P/U Deck ❻ is positioned at DATIL-A.
3) Remove the Ass'y P/U Deck ❻ in direction of arrow "C", while simultaneously pushing the 2 Hooks ❺ in direction of arrow "B".

CAUTION ; Do not stain with grease Pick-Up Lens, Turn table, Roulette Disc, Tray Disc, Belt.

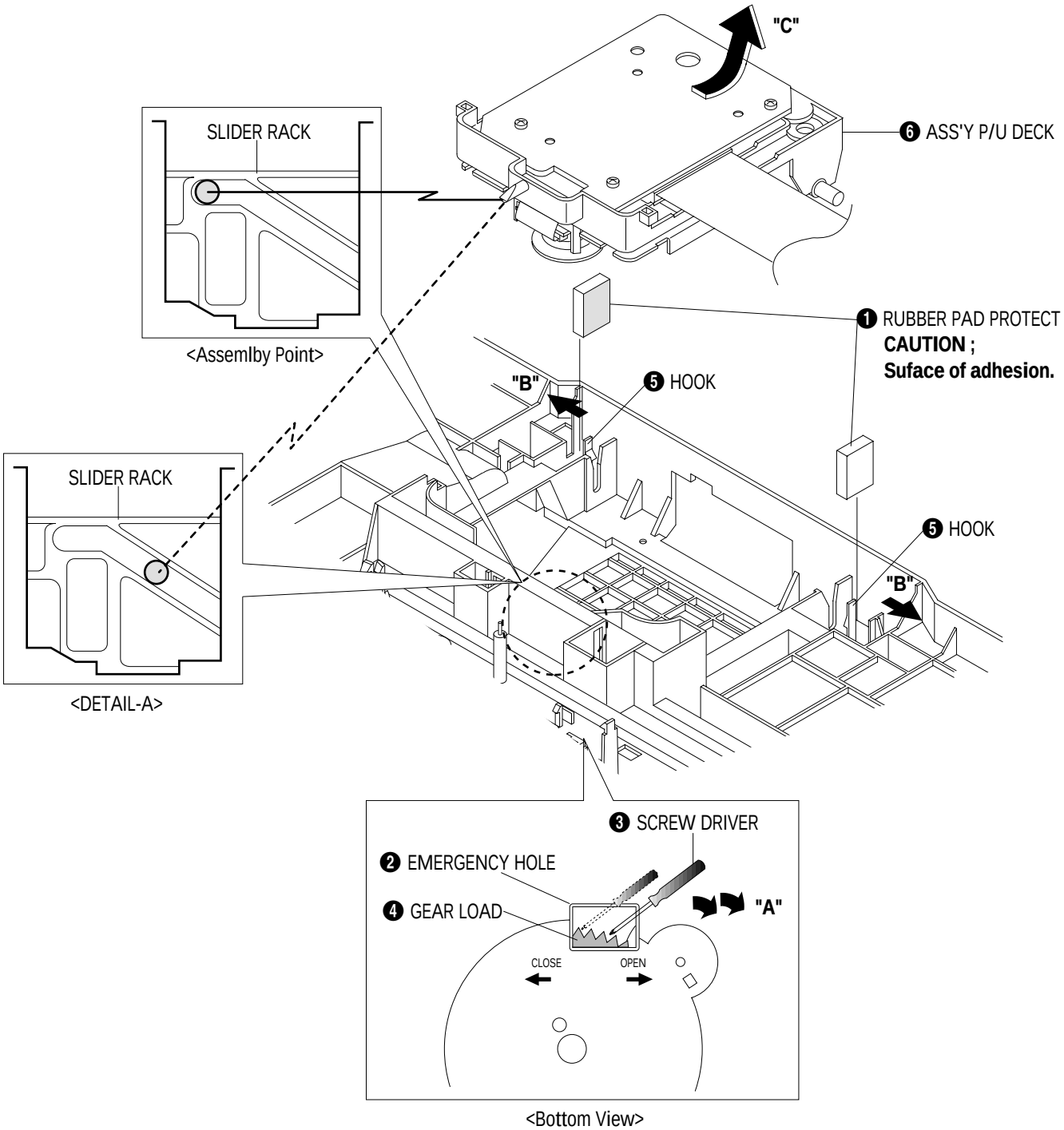


Fig. 4-12 Ass'y P/U Deck Removal

4-4-5 Slider Rack Removal

1) Remove the Slider Rack ❷ in direction of arrow “B”, while simultaneously pushing the Lever Locker ❶ in direction of arrow “A”.

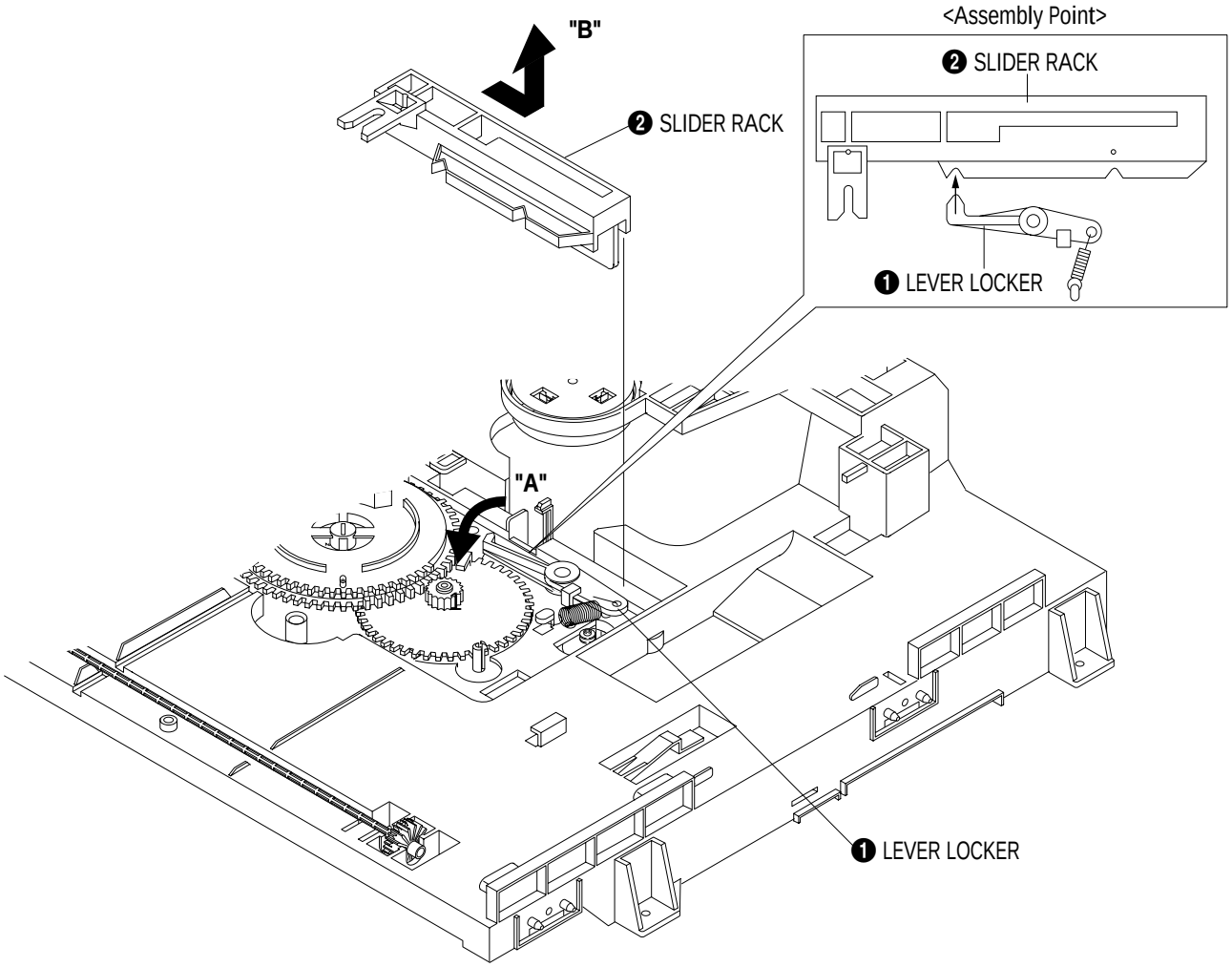


Fig. 4-13 Slider Rack Removal

4-4-6 Belt Pulley, Gear Pulley Removal

1) Remove Belt Pulley ❶.
2) Push the Hook ❸ in the Boss ❷ in the direction of arrow.
3) Lift up the Gear Pulley ❹.

CAUTION ; Do not stain with grease Pick-Up Lens, Turn table, Roulette Disc, Tray Disc, Belt.

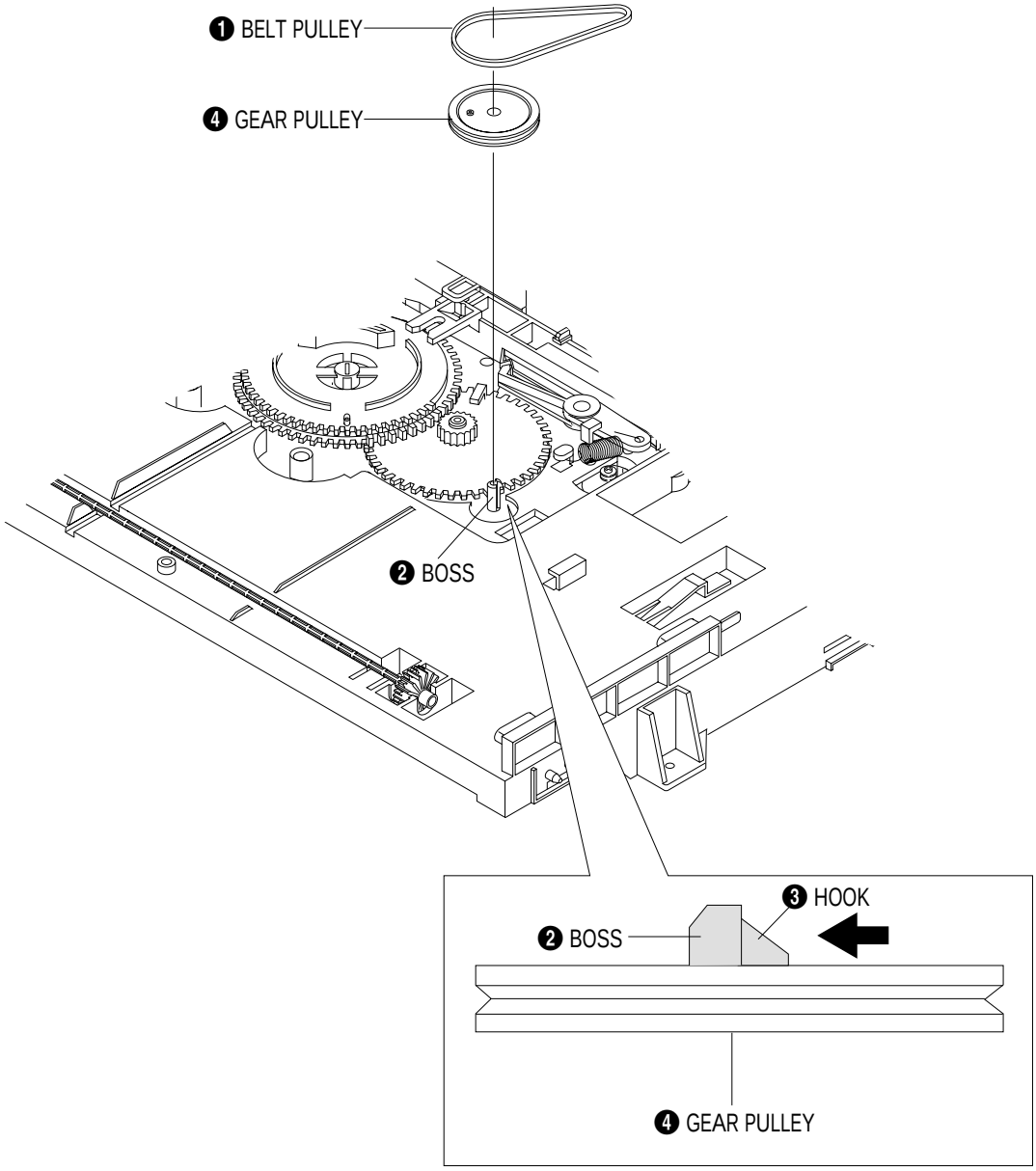


Fig. 4-14 Belt Pulley, Gear Pulley Removal

4-4-7 Gear Tray, Gear Convert, Gear Cam, Gear Load Removal

1) Push the Hook ❷ below the Gear Tray ❶ in the direction of arrow and lift up Gear Tray ❶.
2) Push the Hook ❷ below the Gear Convert ❸ in the direction of arrow and lift up Gear Convert ❸.
3) Push the Hook ❷ below the Gear Cam ❹ in the direction of arrow and lift up Gear Cam ❹.
4) Remove Gear Load ❺.

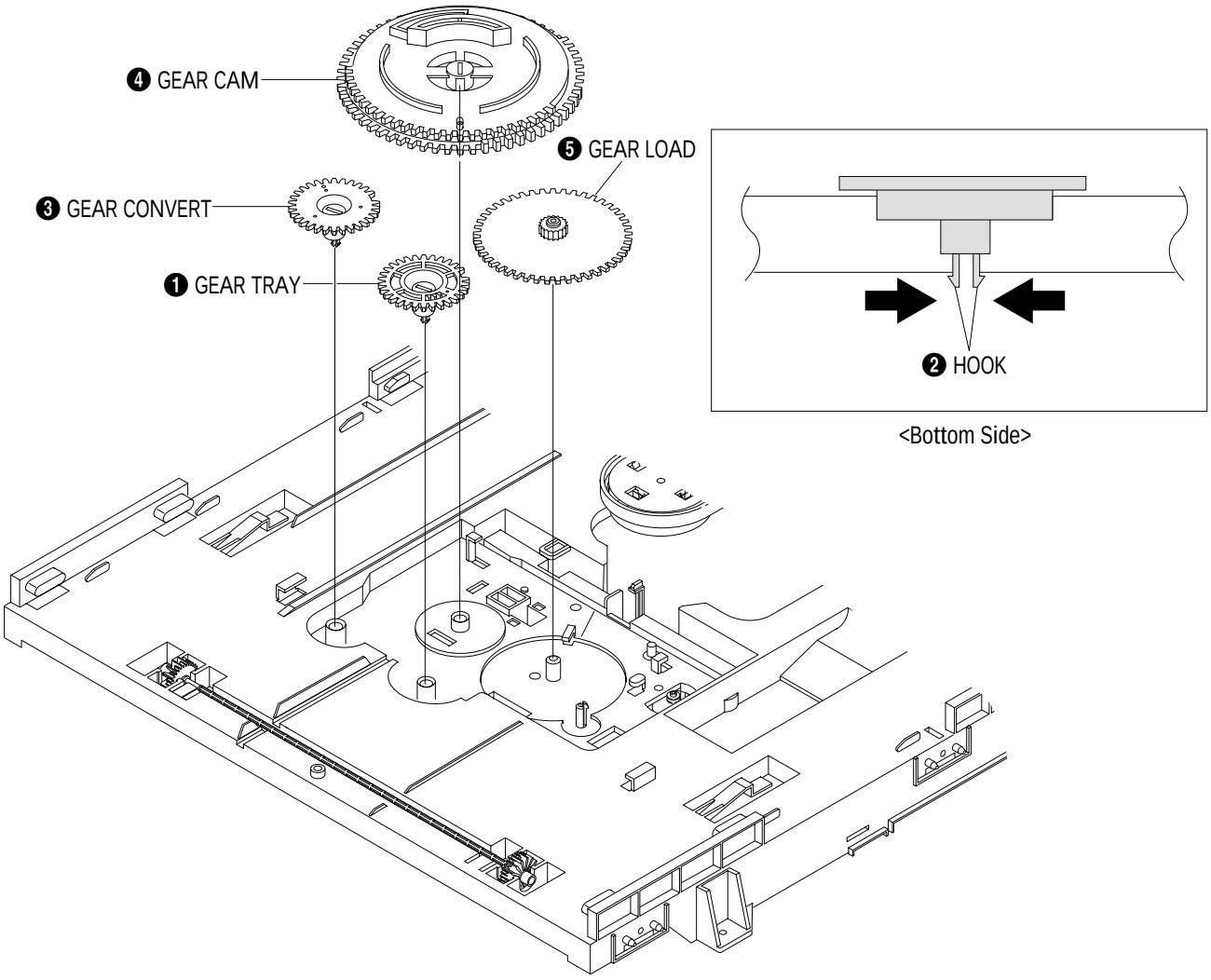


Fig. 4-15 Gear Tray, Gear Convert, Gear Cam, Gear Load Removal

4-4-8 Spring Locker, Lever Locker Removal

1) Remove Spring Locker ❶.
2) Lift up the Lever Locker ❷ pushing the direction of arrow “A”.
3) Remove the Gear Syncro ❹ in direction of arrow “B”, while simultaneously pushing the 2 Hooks ❸.

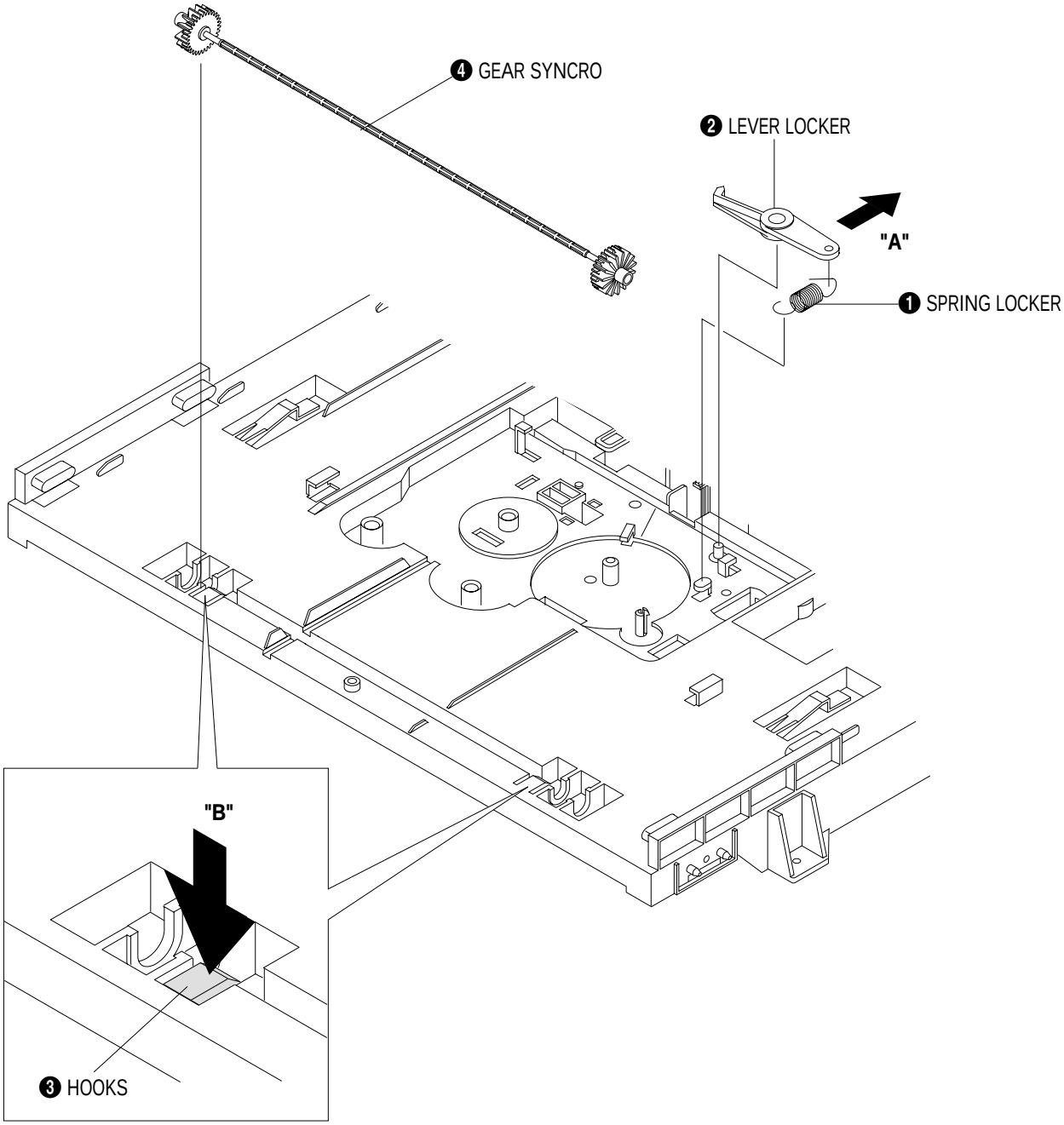


Fig. 4-16 Spring Locker, Lever Locker Removal

4-4-9 PCB Motor Ass'y, PCB Switch Removal

1) Push the Hook ❶ in the direction of arrow "A", 4 Hooks ❷ in the direction of arrow "B" and lift up PCB Motor Ass'y ❸.
2) Push the 3 Hooks ❹, ❺, ❻ in the direction of arrow "C" and lift up PCB Switch Ass'y ❼.

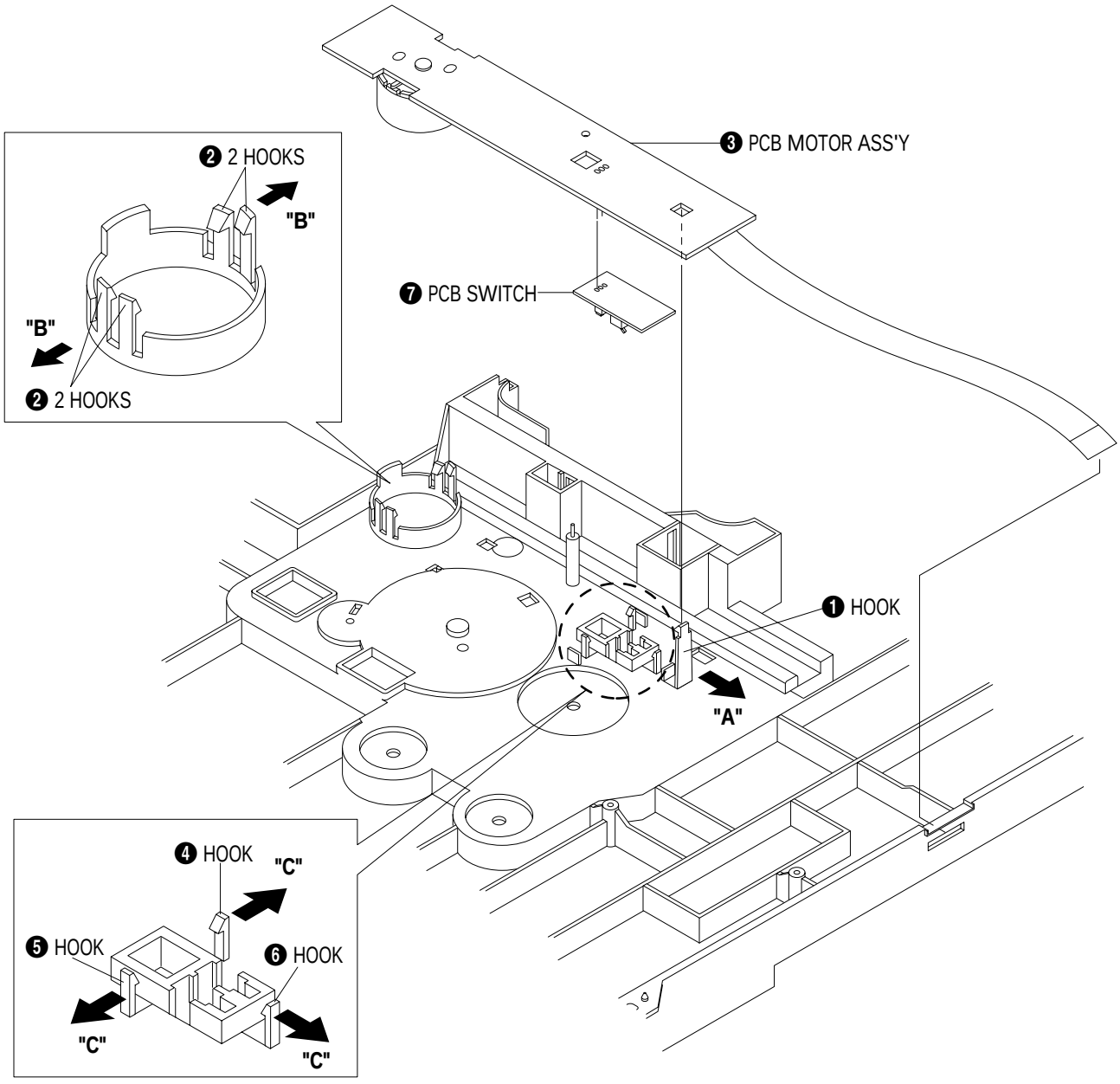


Fig. 4-17 PCB Motor Ass'y, PCB Switch Removal

4-4-10 Clamper Removal

1) Pull the Clamper ❷ by hand in the direction of arrow ”B”, while simultaneously pushing the 4 Hooks ❶ in direction of arrow “A”.
2) Remove the Magnet ❸.
3) Lift up the Plate Chuck ❹.

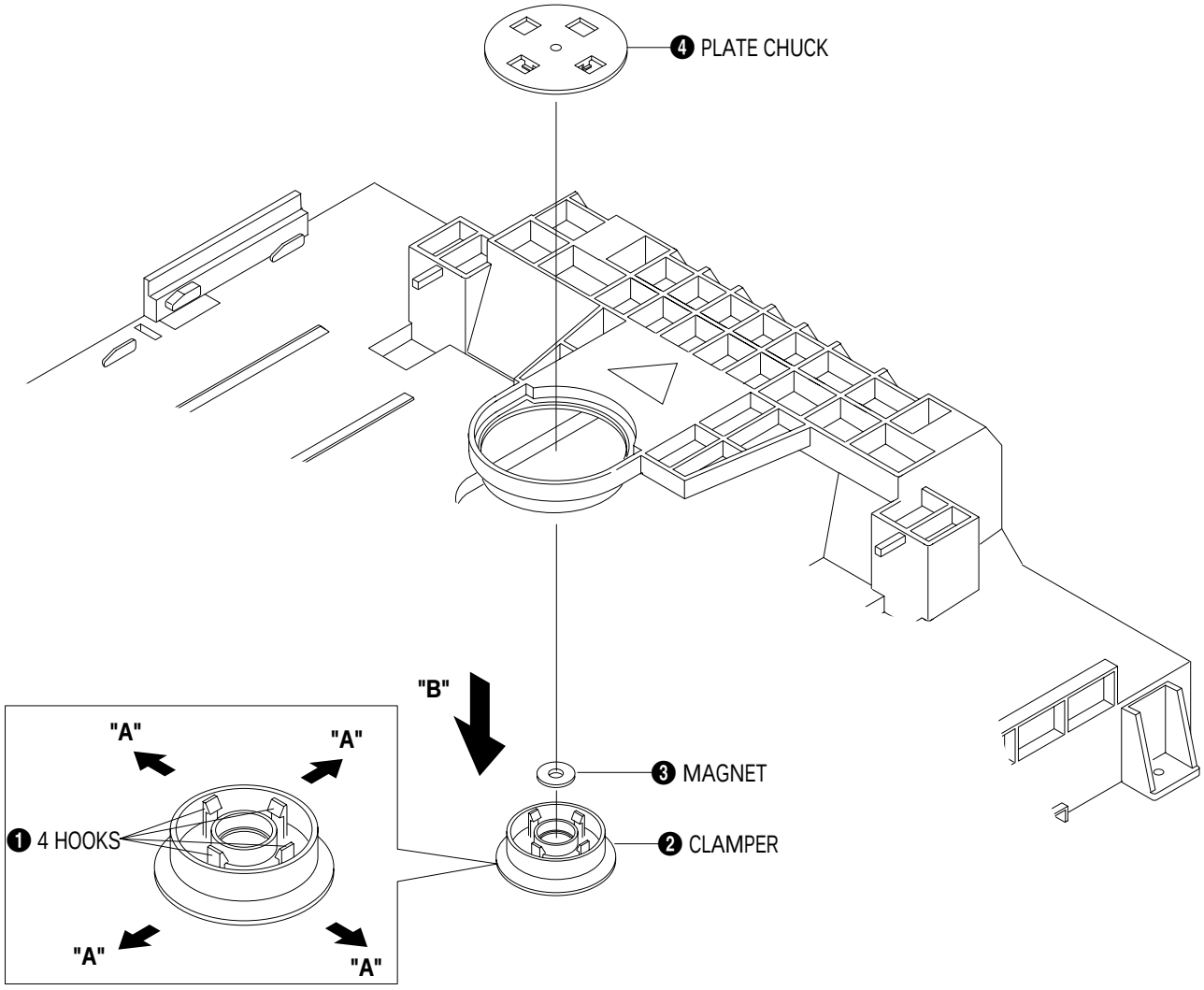


Fig. 4-18 Clamper Removal

4-4-11 Pick-Up Ass'y Removal

1) Remove Washer ❶ and lift up the Gear Feed U ❷.
2) Disconnect FPC ❸ from CN2.
3) Push the Stopper ❹ in the direction of arrow "A".
4) Pull the Shaft P/U ❺ in the direction of arrow "B" to remove.
5) Lift up the Pick-up ❻ in the direction of arrow "C".

CAUTION ; Do not stain with grease Pick-Up Lens, Turn table, Roulette Disc, Tray Disc, Belt.

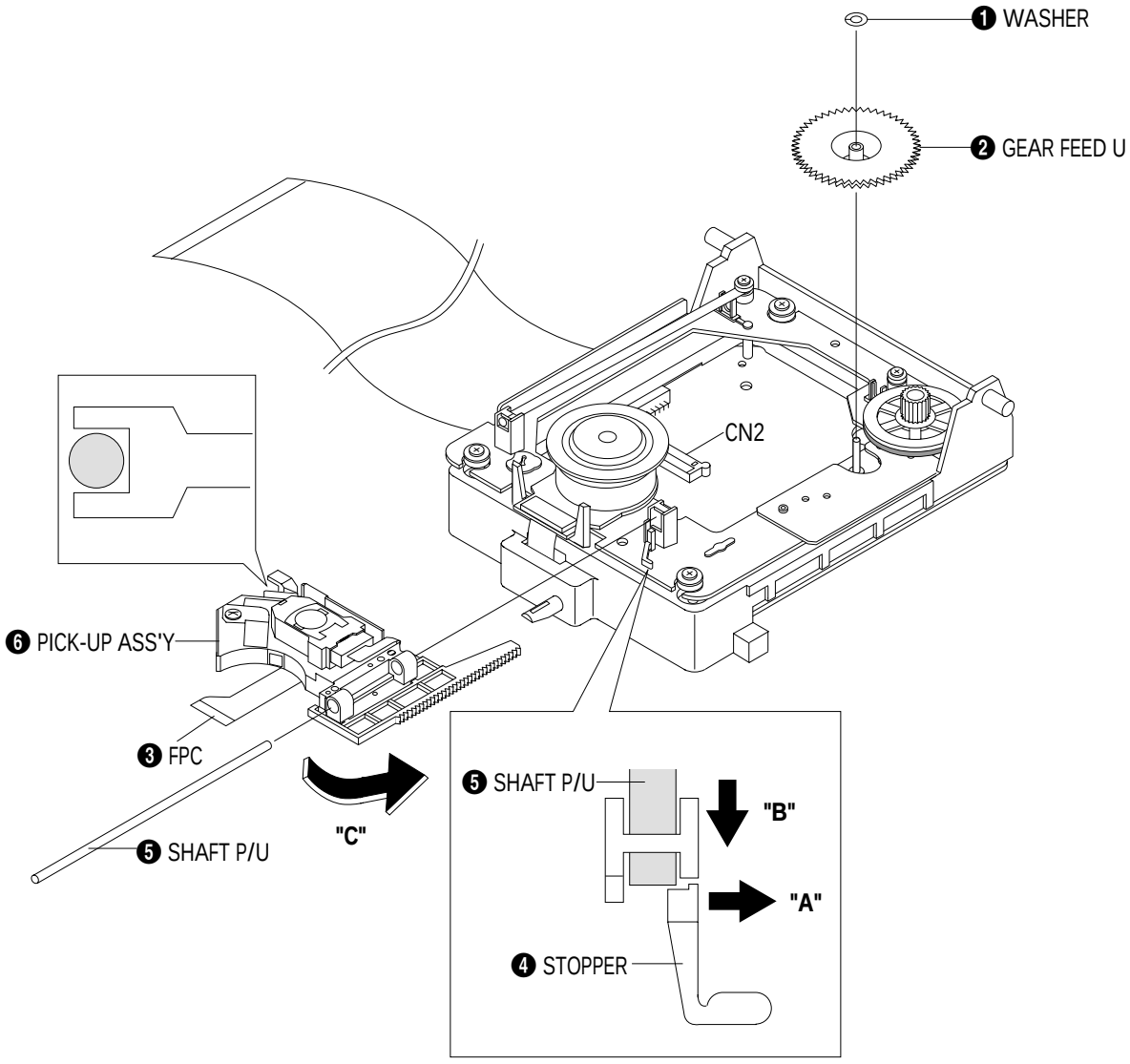


Fig. 4-19 Pick-Up Ass'y Removal

4-4-12 PCB Deck Removal

1) Remove the soldering of CN4 ❶ (Pin 6).
2) Remove the Soldering pole of Motor Feed ❷ (+, - pole).
3) Remove 3 Screws ❸.
4) Remove the FPC ❹ from Motor Spindle Ass'y side.
5) Remove PCB Deck ❺.

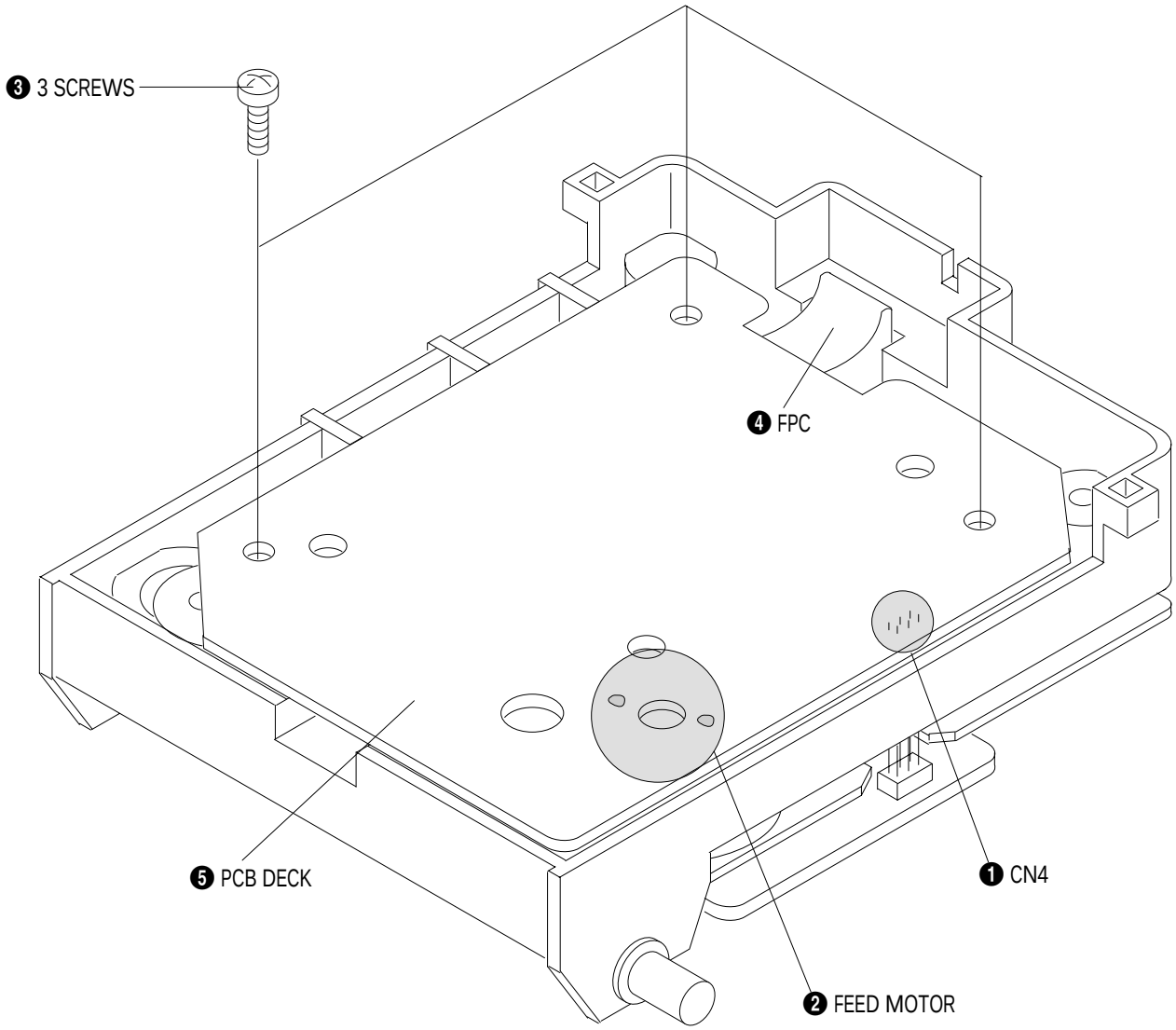


Fig. 4-20 PCB Deck Removal

4-4-13 Spindle Motor Removal

1) Remove 3 Screws ❶.
2) Lift up the Spindle Motor ❷.

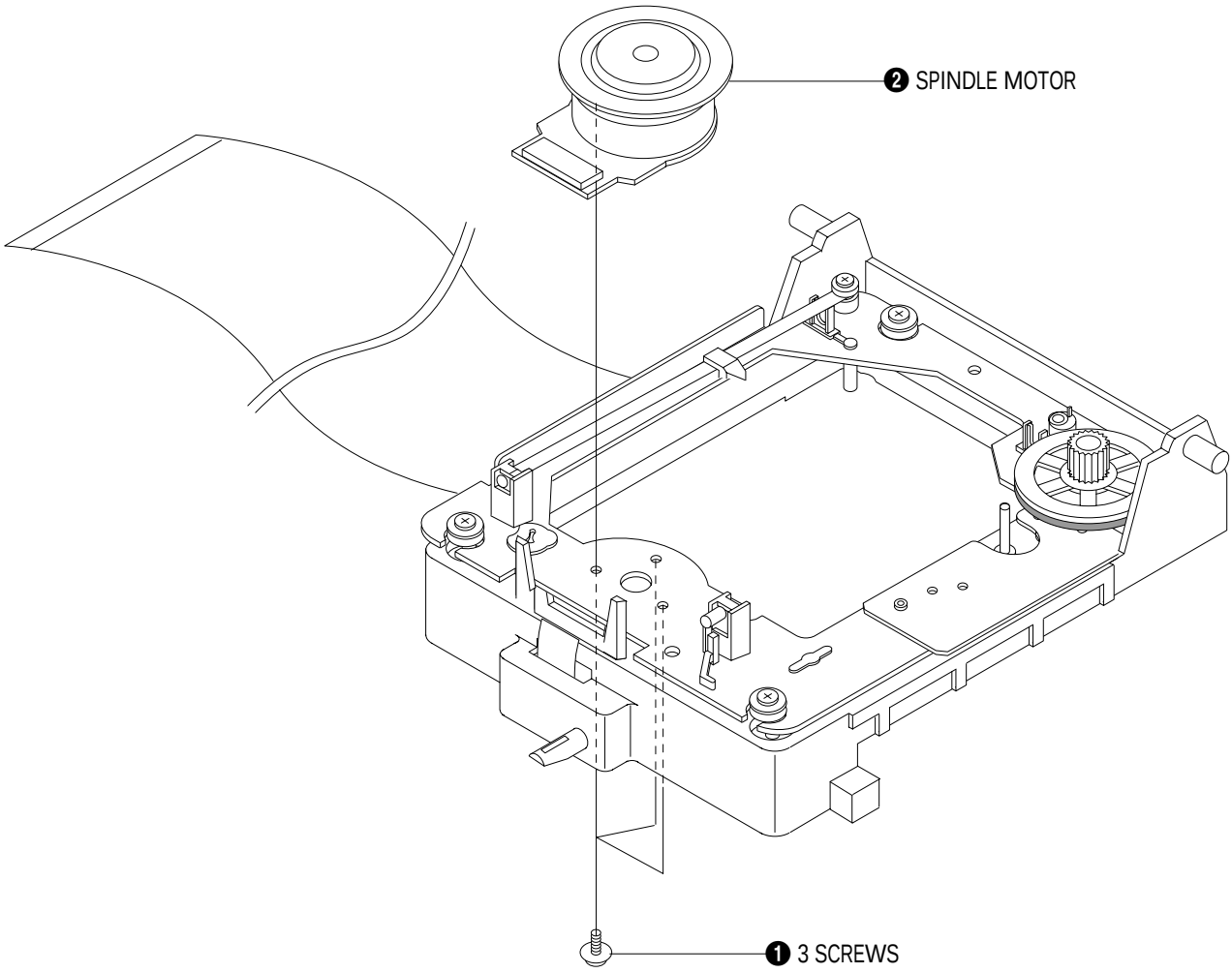


Fig. 4-21 Spindle Motor Removal

4-4-14 Bracket Deck Ass'y Removal

1) Remove 4 Screws ❶.
2) Lift up the Bracket Deck Ass'y ❷.

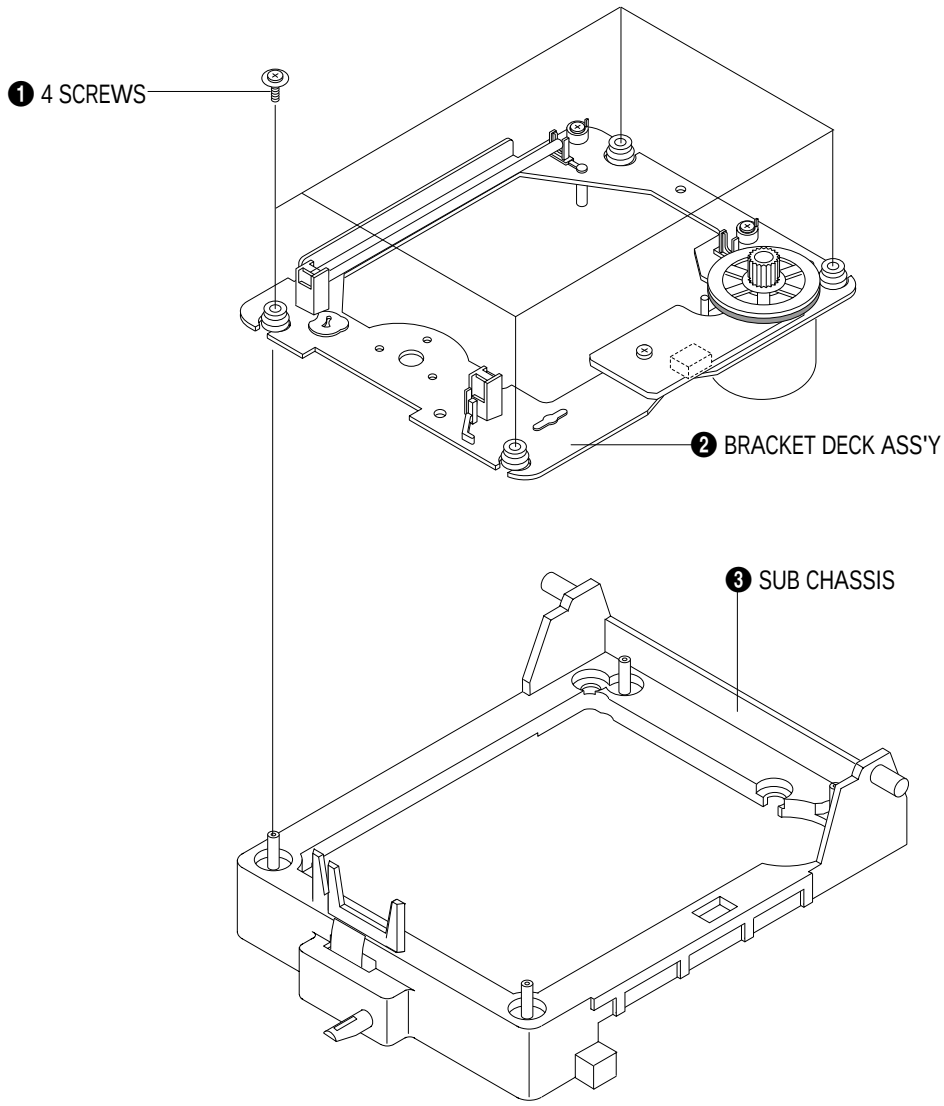


Fig. 4-22 Bracket Deck Ass'y Removal

4-4-15 Assembly of Gear

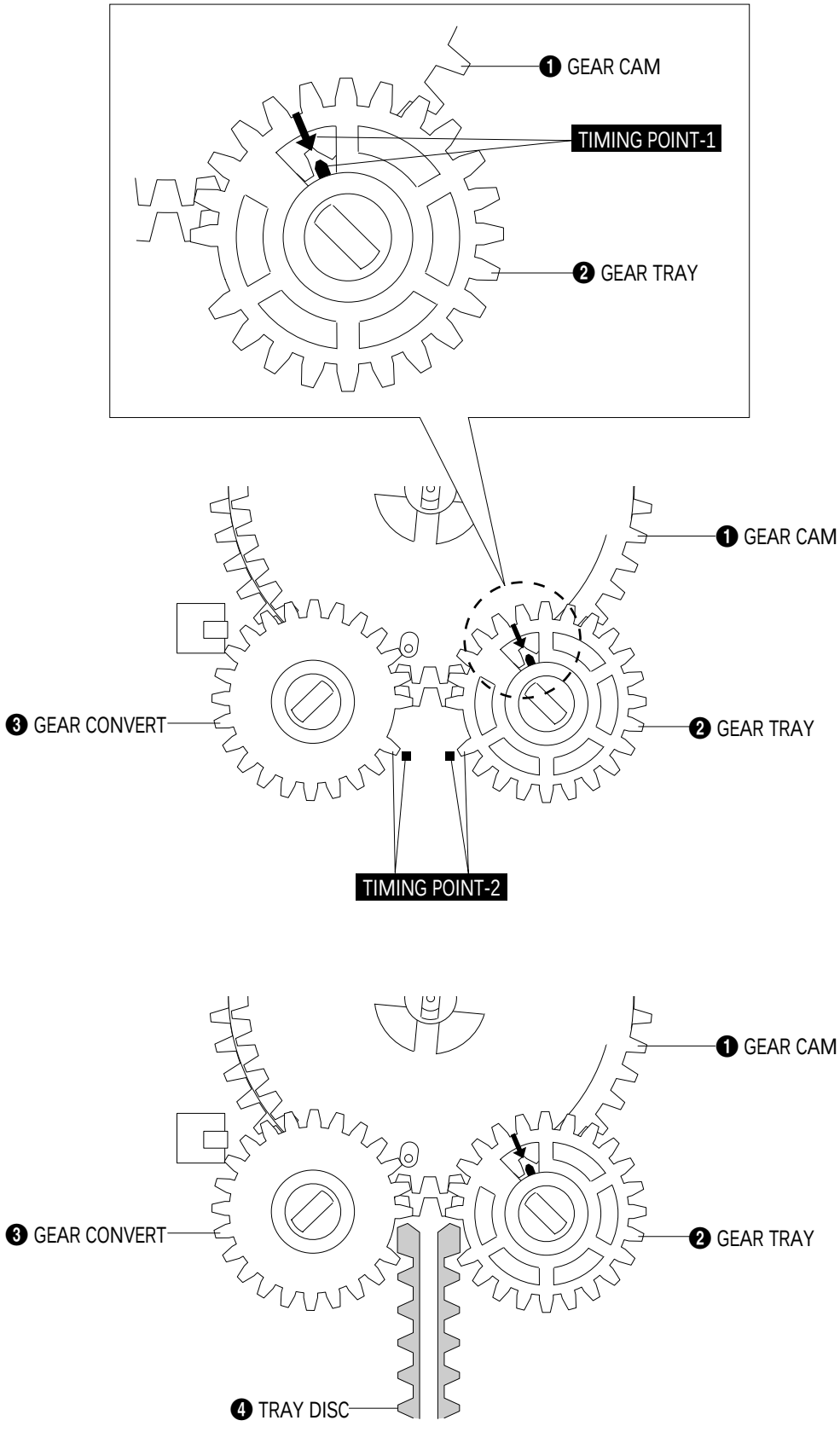


Fig. 4-23 Assembly of Gear

MEMO

5. Circuit Descriptions

5-1 S.M.P.S.

5-1-1 Comparsion between Linear Power Supply and S.M.P.S.

5-1-1 (a) Linear

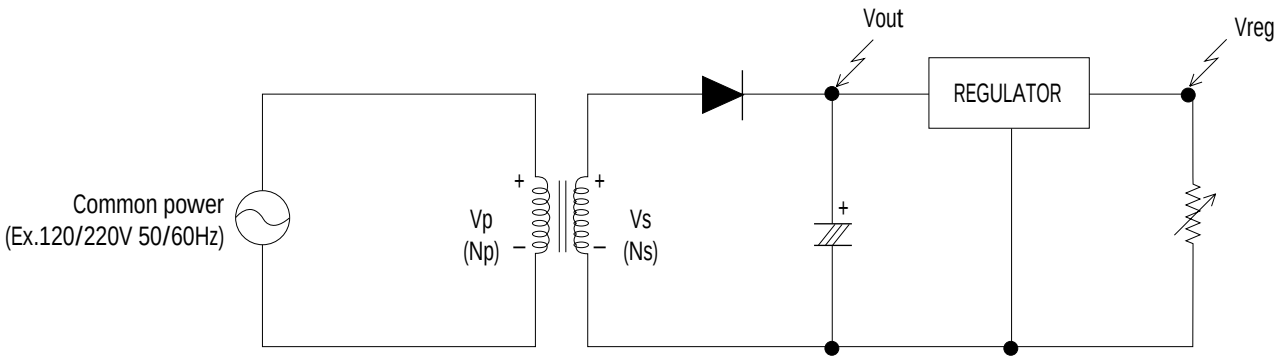


Fig. 5-1 Linear Power Supply

Waveform/Description

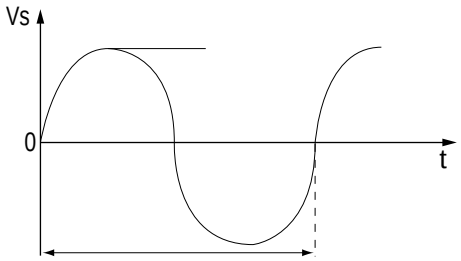


Fig. 5-2

Input : Common power to transformer (Vp).

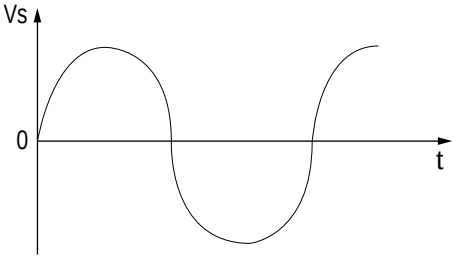


Fig. 5-3

The output Vs of transformer is determined by the ratio of 1st Np and 2nd Ns.
Vs = (Ns / Np) x Vp

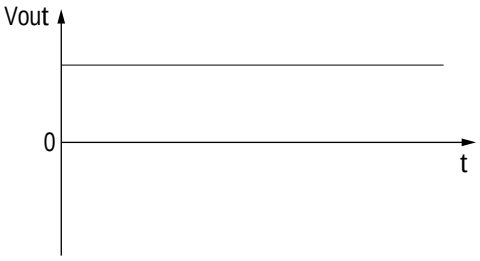


Fig. 5-4

Vout is output (DC) by diode and condensor.

Advantages and disadvantages of linear power supply

1) Advantages : Little noise because the output waveform of transformer is sine wave.

2) Disadvantages :
   ❶ Additional margin is required because Vs is changed (depending on power source). (The regulator loss is caused by margin design).
   ❷ Greater core size and condensor capacity are needed, because the transformer works on a single power frequency.

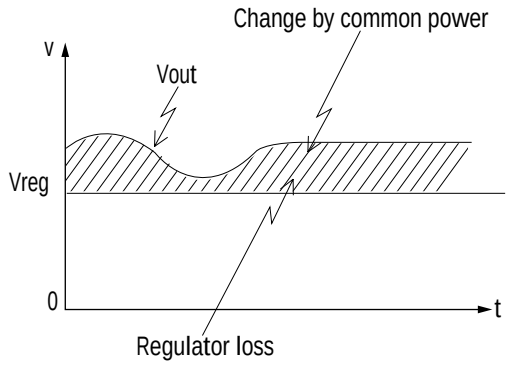


Fig. 5-5

5-1-1 (b) S.M.P.S. (Pulse width modulation method)

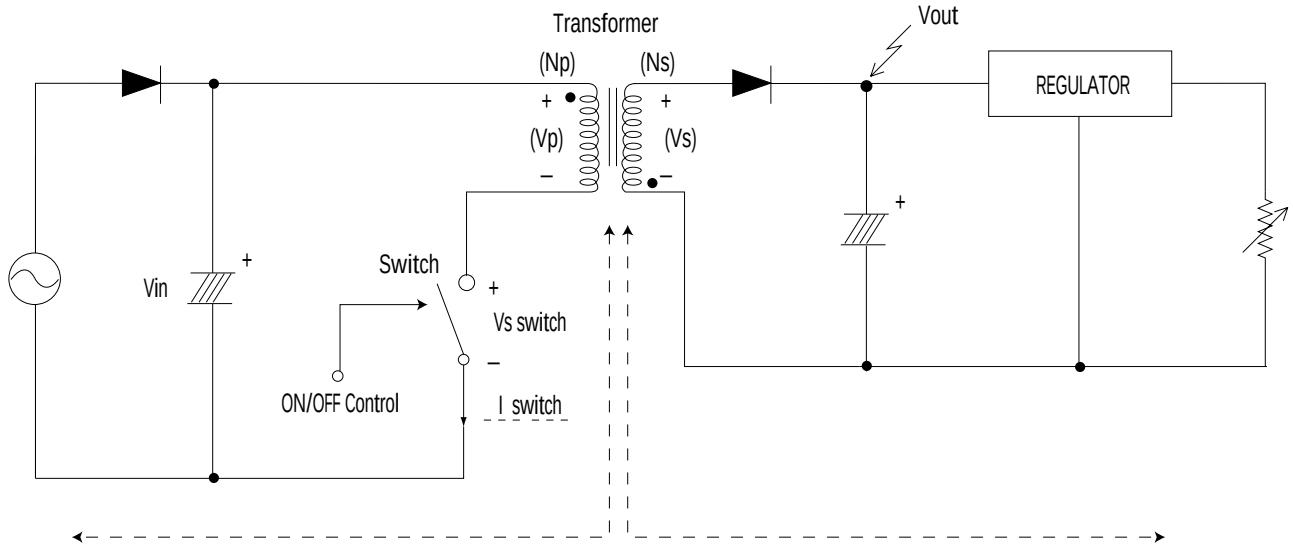


Fig. 5-6

Terms

1) 1st : Common power input to 1st winding.
2) 2nd : Circuit followings output winding of transformer.
3) f (Frequency) : Switching frequency (T : Switching cycle)
4) Duty : (Ton / T) x 100

5-1-2 Circuit description (FLY-Back PWM (Plise Width Modulation) Control)

5-1-2 (a) AC Power Rectification/Smoothing Terminal

1) PD01,PD02,PD03,PD04 : Convert AC power to DC(Wave rectification)
2) PE3 : Smooth the voltage converted to DC(Refer to VIN of Fig. 5-7)
3) PC01, PC02, PC10, PC11, PC12, PC13, PL01, PL02, PL03 : Noise removal at power input/output
4) PVA1 : SMPS protection at power surge input (PVA1 pattern open is to remove noise)
5) PR10 : Rush current limit resistance at the moment of power cord insertion.
   ❶ Rush current = (AC input voltage x 1.414 - Diode drop voltage) / Pattern resistance + PL02,01 resistance + PC10 resistance + PR10) (AC230V based : approx. 26A)
   ❷ Without PR10, the bridge diode might be damaged as the rush current increases.

5-1-2 (b) SNUBBER Circuit : PR15, PR16, PC04, PC05, PD11, PR17

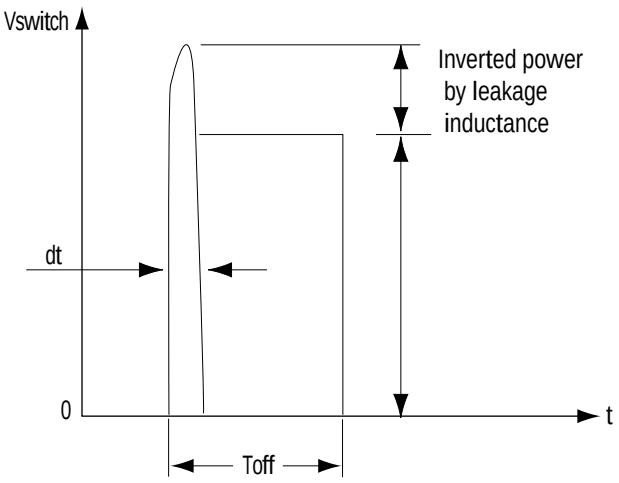


Fig. 5-7

1) Prevent residual high voltage at the terminals of switch during switch off/Suppress noise.
   High inverted power occurs at switch (PIC1) off, because of the 1st winding of transformer :
   (V= LI xdi/dt. LI : Leakage Induction)
   A very high residual voltage exists on both terminals of PIC1 because dt is a very short.

2) SNUBBER circuit protects PIC1 from damage through leakage voltage suppression by RC, (Charges the leakage voltage to PD11 and PC04, and discharges to PR15 and PR16).

3) PC05, PR17 : For noise removal

5-1-2 (c) PIC1 Vcc circuit

1) PR11, PR12, PR13, PR14 : PIC1 driving resistance (PIC1 works through driving resistance at power cord in)
2) PIC1 Vcc : PR18, PD12, PE6
   ❶ Use the output of transformer as Vcc, because the current starts to flow into transformer while PIC1 is active.
   ❷ Rectify to PD12 and smooth to PE6.
   ❸ Use the output of transformer as PIC1 Vcc : The loads are different before and after PIC1 driving.
   (Vcc of PIC1 decreases below OFF voltage, using only the resistance due to load increase after PIC1 driving.)

5-1-2 (d) Feedback Control Circuit

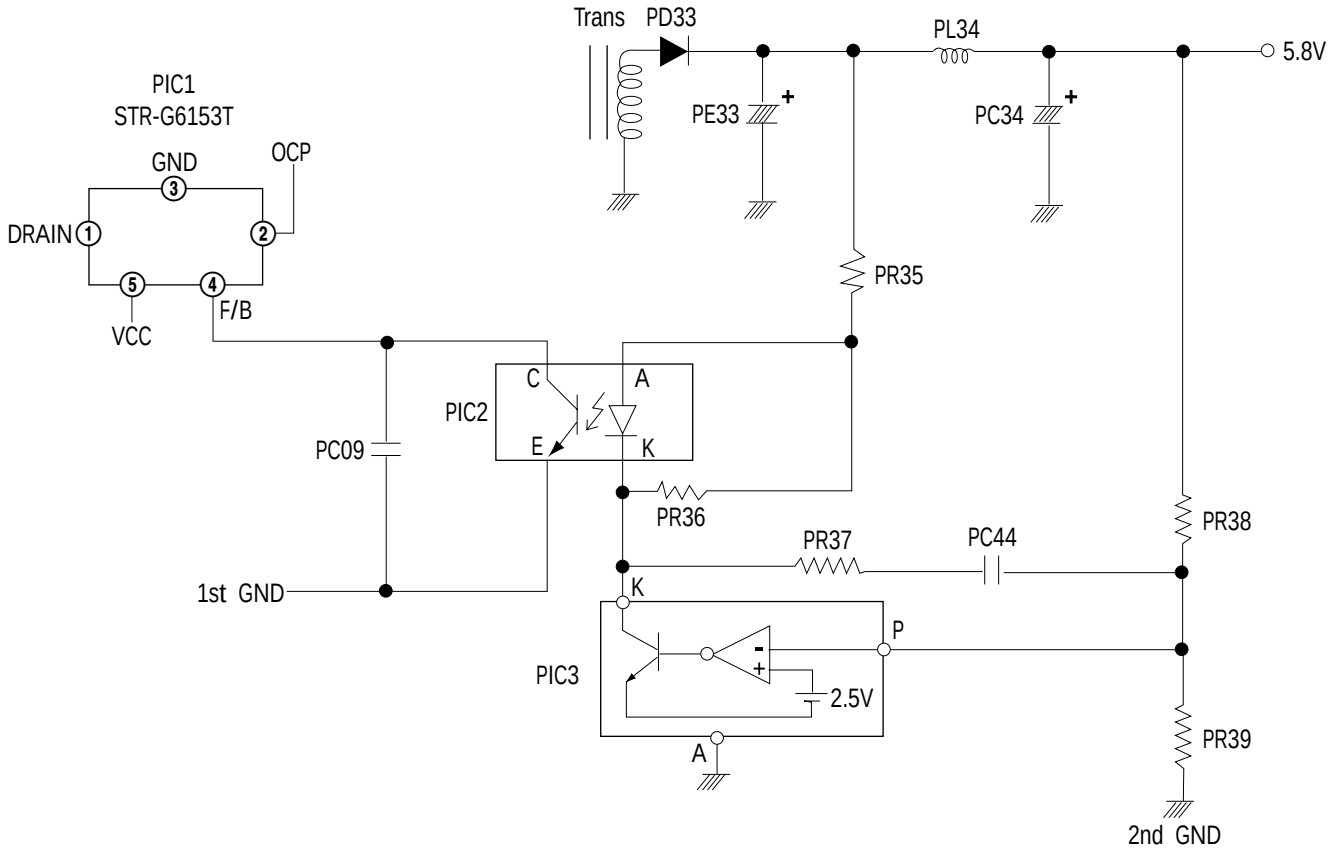


Fig. 5-8

1) F/B terminal of PIC1 determines output duty cycle.
2) C-E(Collector-Emitter) of PIC2 and F/B potential of PIC1 are same.

Operation descriptions

1) Internal OP-Amp '+' base potential of PIC3 is 2.5V and external "-" input potential is connected with PR38 and PR39 to maintain Vout of 5.8V. (Vout = ((PR36 x PR39) / PR39) x 2.5V)
2) If load of 5.8 V terminal increases(or AC input voltage decreases) and Vout decreases below 5.8V, then :
   PIC3 'P' potential down below 2.5V --> PIC3 A-K of base current down --> PIC3 of A-K current down --> PIC2 Diode current down --> PIC2 C-E current down --> PIC2 C-E voltage up --> PIC1 F/B voltage up --> Out Duty up --> Transformer 1st current up --> Transformer 1st power up --> Vout up --> Maintain Vout 5.8V
3) If load of 5.8 V terminal decreases(or AC input voltage rises) and Vout rises above 5.8V, then :
   Reverse sequence of the above description --> Duty down --> Vout down --> Maintain 5.8V (i.e., the feedback to maintains 5.8V).
   ❶ PR35, PR36 : Reduce 5.8V overshoot
   ❷ PR37, PC44 : Prevent PIC3 oscillation(for phase correction)
   ❸ PC09 : Adjust feedback response rate

5-1-3 Internal Block Diagram

5-1-3 (a) Internal Block Diagram of S.M.P.S. Circuit

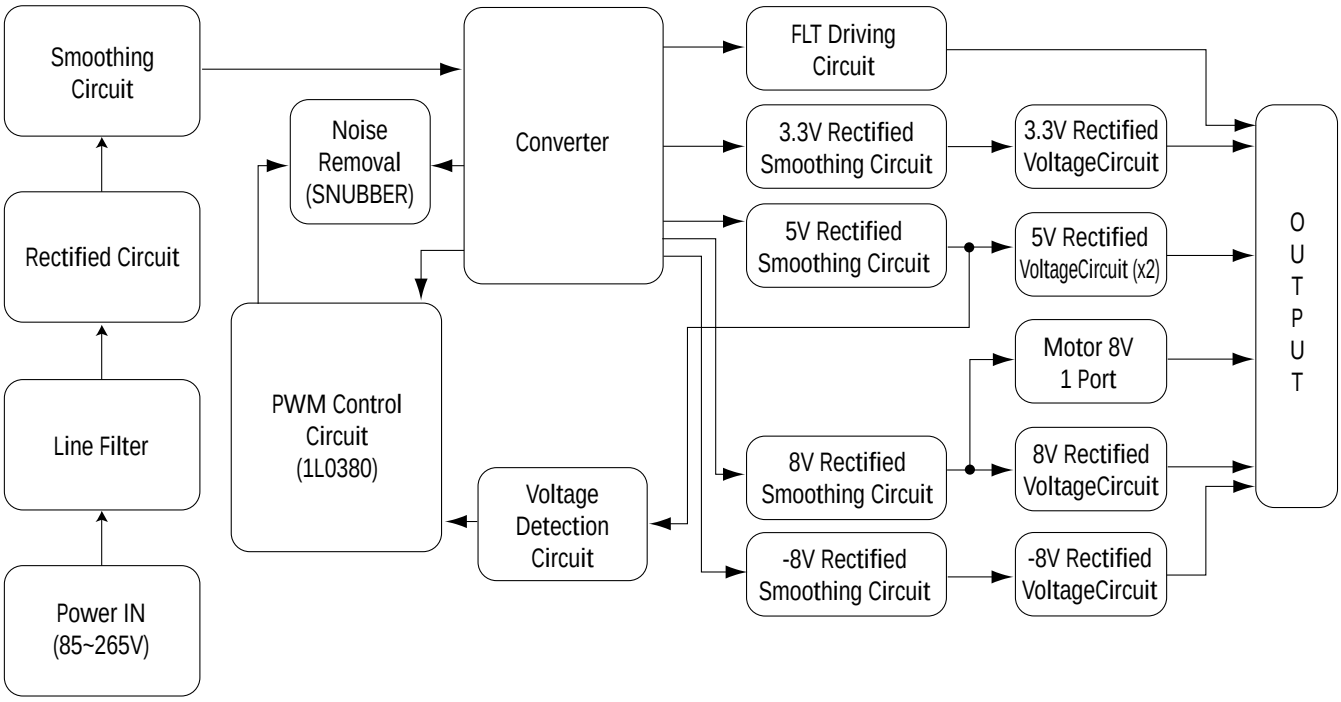


Fig. 5-9

5-1-3 (b) PIC1 (STR-G6153T) Internal Block Diagram

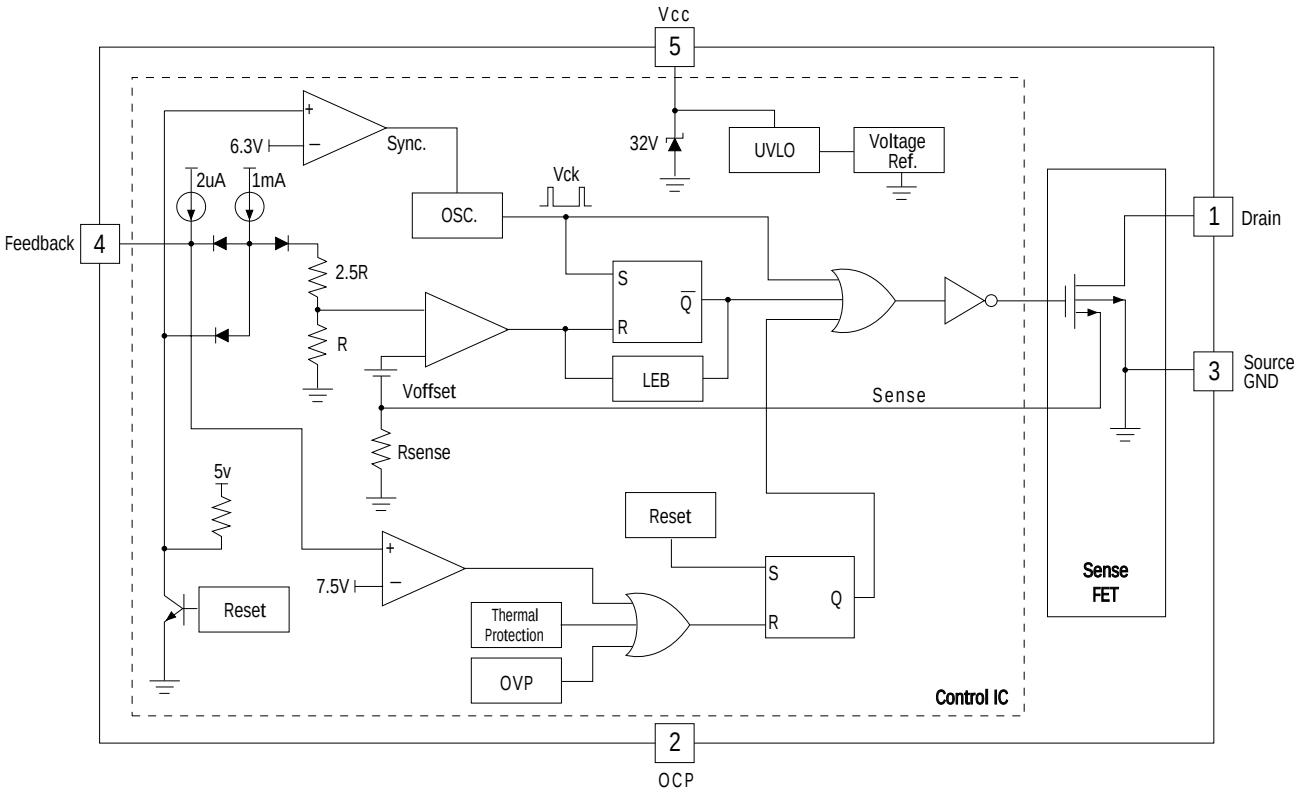


Fig. 5-10

5-2 RF

5-2-1 RIC1 (KS1461)

KS1461 is combined with KS1452 and KS1453 as bipolar IC developed for DVD SERVO system.
Main features include DVD waveform equalizing, CD waveform equalizing, focus error signal generation, 3-beam tracking error signal generation, DPD 1-beam tracking error, defect, envelope, MIRR output, etc. after receiving the pick-up output converted into I/V.

5-2-1 (a) Basic Potentiometer

KS1461 uses a single power method and each circuit is based on V of 2.5V.
V (Pin 12, 20, 24, 67) terminal is needed for IC, which uses the peripheral V.

5-2-1(b) RF signal

Fig. 5-11 shows the flow of signal generated by the pick-up.
A, B, C, D signals detected from pick-up are converted in to RF signal(A+B+C+D) via RF summing AMP.

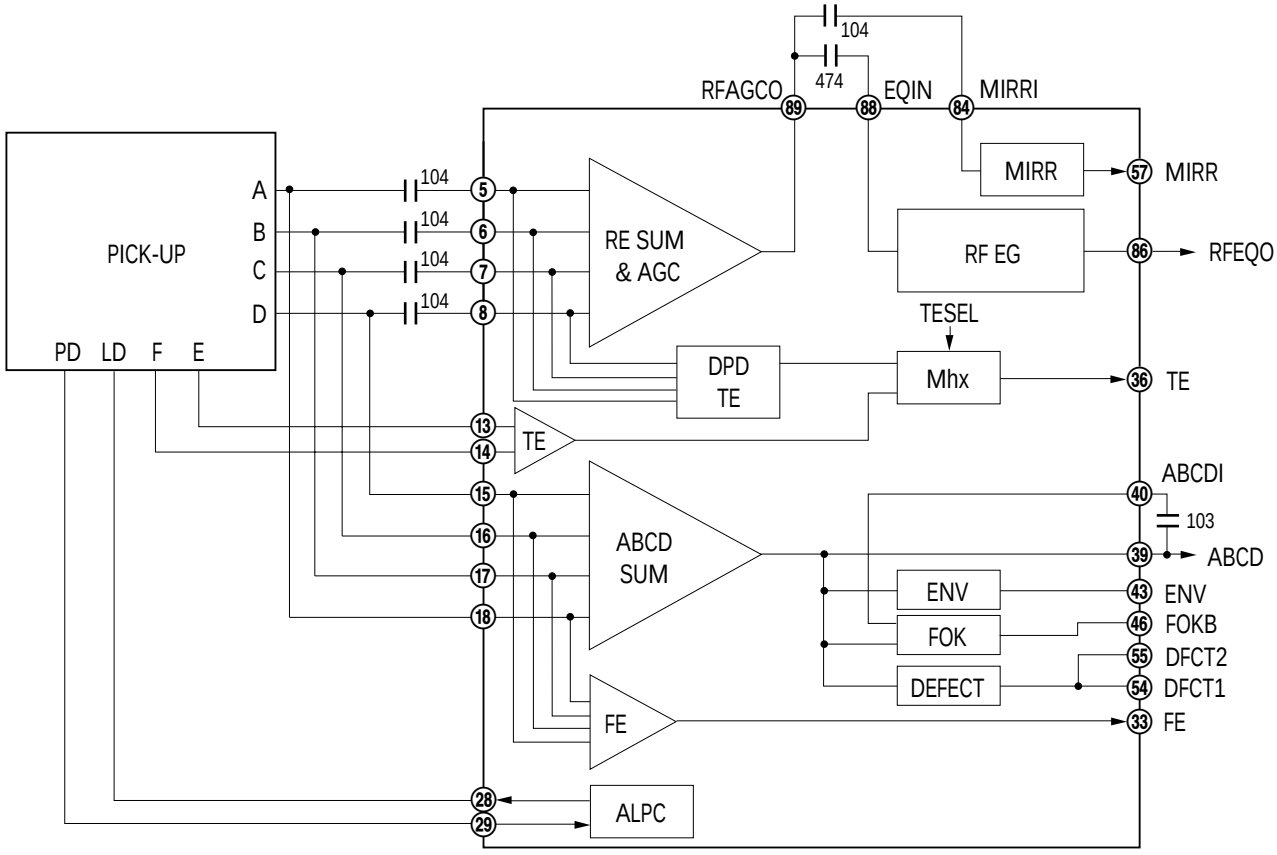


Fig. 5-11

Fig. 5-12 shows the waveform-equalizing block diagram for the RF signal.
It outputs to EQout (Pin 86) terminal by initially changing switching AMP gain of DVD and CD, and then adjusting the level in RF SUM & AGC. It controls RF SUM & AGC gain by means of Pin 89-95 and interfaces with PWM signal, (output from PWM terminal of KS1453, via low-pass filter to adjust boost gain and peak frequency.
EQout terminal is connected with EQin (Pin 86).

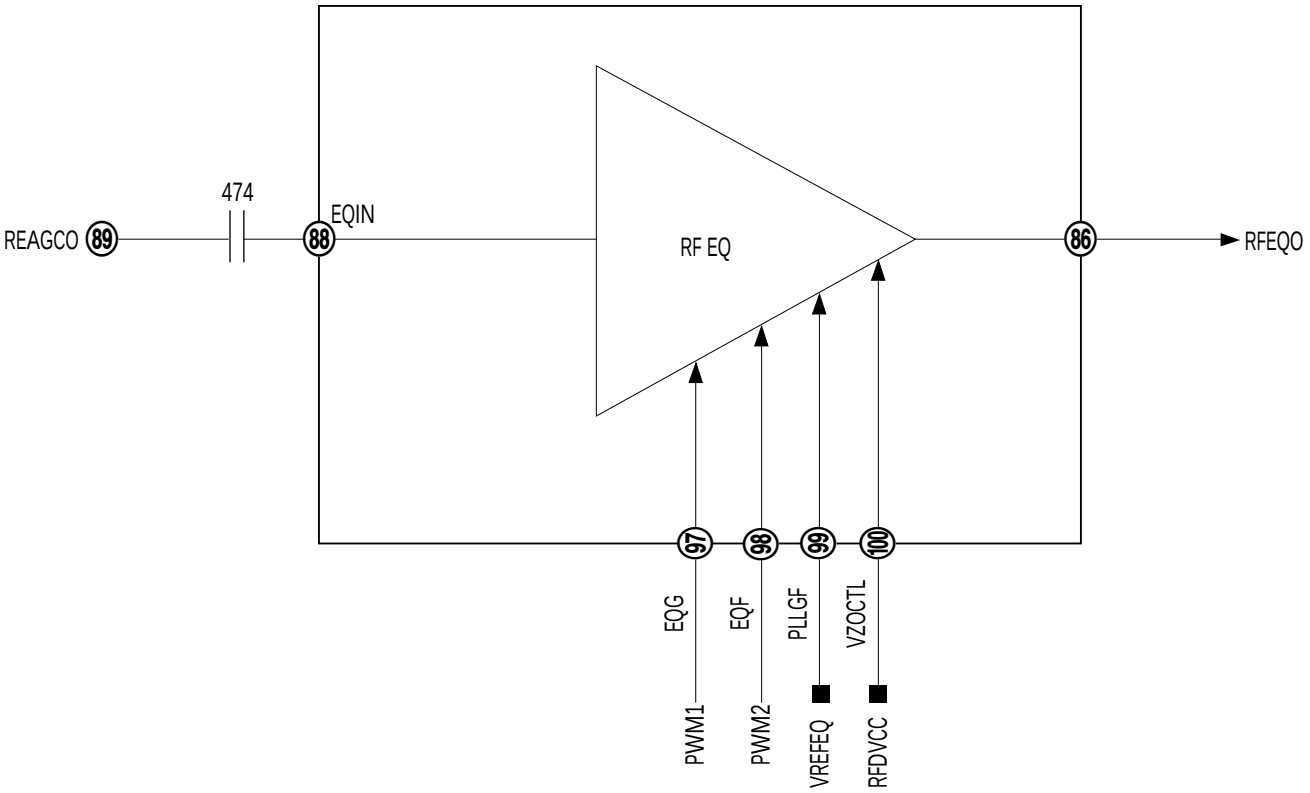


Fig. 5-12

The control parameters of DVD EQ and CD EQ are as follows.

1) DVD CD EQ control parameter

❶ EQG (Pin 97) : Changes the gain of peak frequency with EQ frequency characteristic. Convert PWM signal, output from KS1453, into DC via low-pass filter.

❷ EQF (Pin 98) : Changes the peak frequency with EQ frequency characteristic. Convert PWM signal, output from KS1453, into DVD via low-pass filter.

5-3 System Control

5-3-1 Outline

The main micom peripheral circuit is composed of 16bit Micom (MIC1 ; TMP93CM41F), 8M EPROM (MIC8 ; AM27-C080) for Microcode and data save, 512 byte EE-PROM (MIC5 ; KS24C020) for permanent storage of data needed at power off, MIC4 (74AC573) to latch only address in the bus where address and data are mixed, address decoder (MIC7 ; 74HC00) for selection of ex-ternal device chip and 20MHz clock oscillator for micom operation. The Micom (MIC1 ; TMP93CM41F) mounted in main board analizes the key commands of front panel or instructions of remote control through communication with Micom (FIC1 ; LC86P6232) of front and controls the devices on board to execute the corresponding commands after initializing the devices connected with micom on board at power on.

5-3-2 Block Diagram

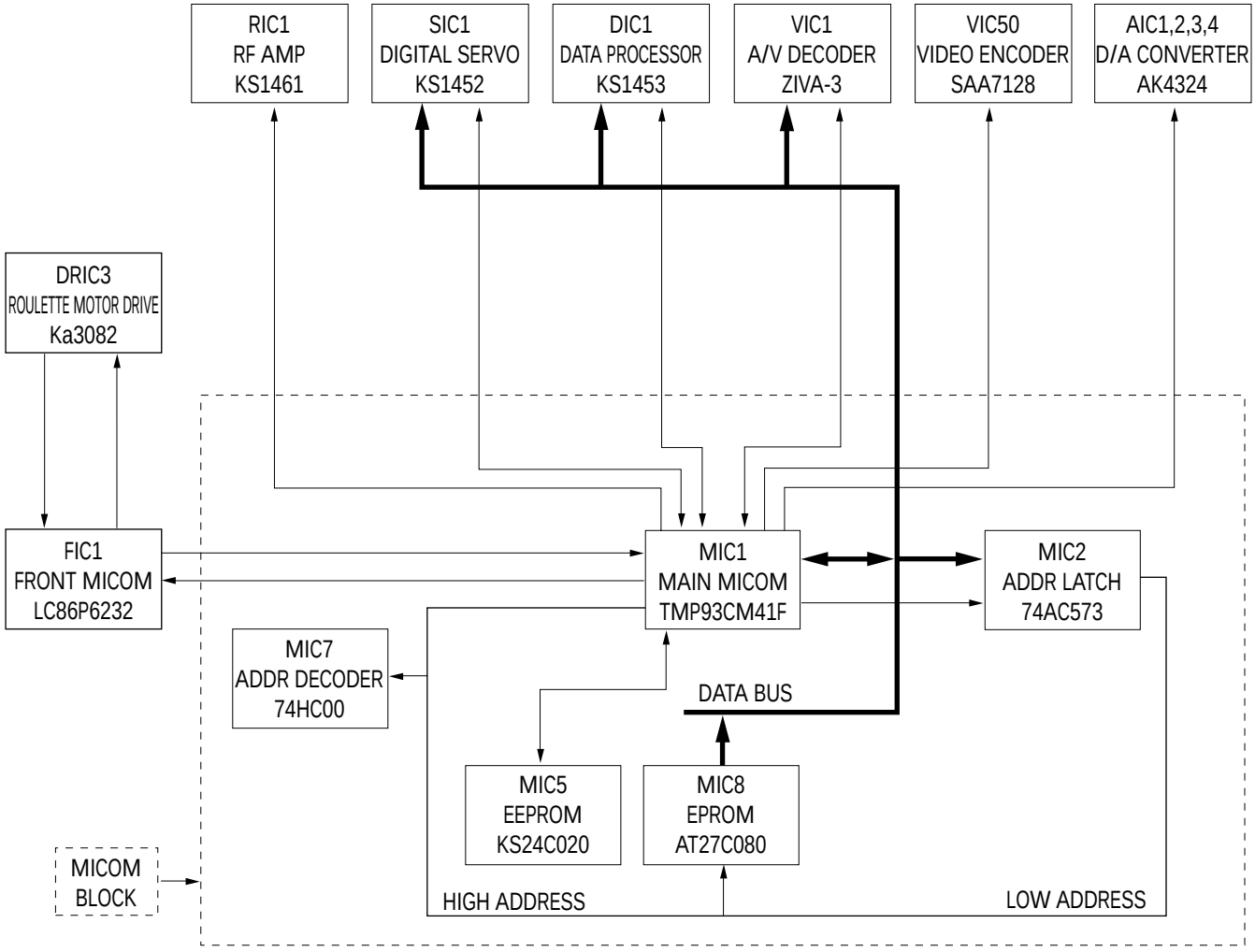


Fig. 5-13

5-3-3 Waveform Description

When micom accesses each device sharing bus, it falls the chip select signal of corresponding chip to (CS2:MIC8-22, /DSPCS:DIC1-2, /DVDCS:VIC1-206/SRVCS:SIC1-10) 0 (Low) before trial.
So to speak, the bus is used by time-division as shown in Fig 5-14, 5-15, 5-16.
Two and more devices can't be accessed simultaneously.

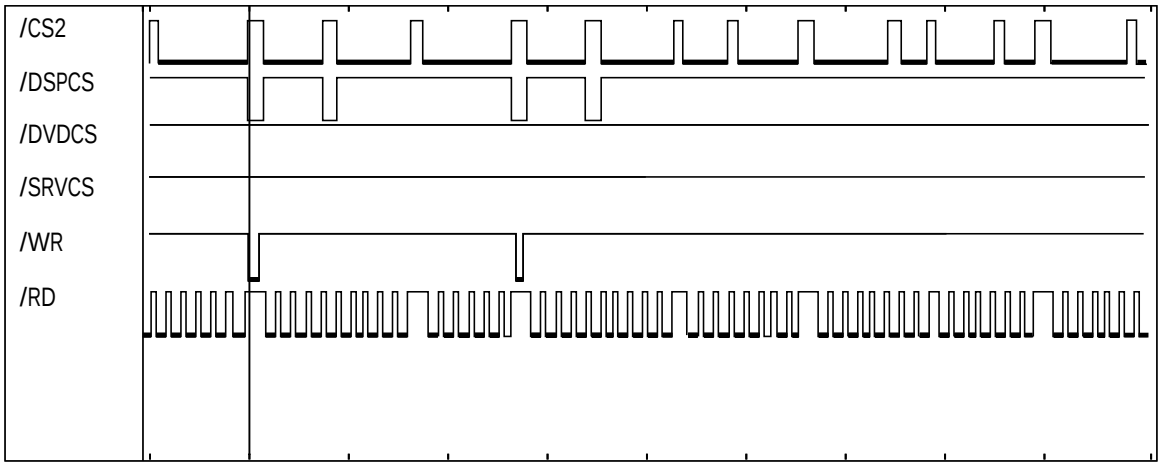


Fig. 5-14

- CH1 : CS2 (MIC8-22, EPROM CHIP SELECT)
- CH2 : DSPCS (DIC1-2, DATA PROCESSOR CHIP SELECT)
- CH3 : DVDCS (VIC1-206, A/V DECODER CHIP SELECT)
- CH4 : SRVCS (SIC1-10, DIGITAL SERVO CHIP SELECT)
- CH5 : WR (MIC1-73, MICOM OUTPUT WRITE SIGNAL)
- CH6 : RD (MIC1-72, MICOM OUTPUT READ SIGNAL)

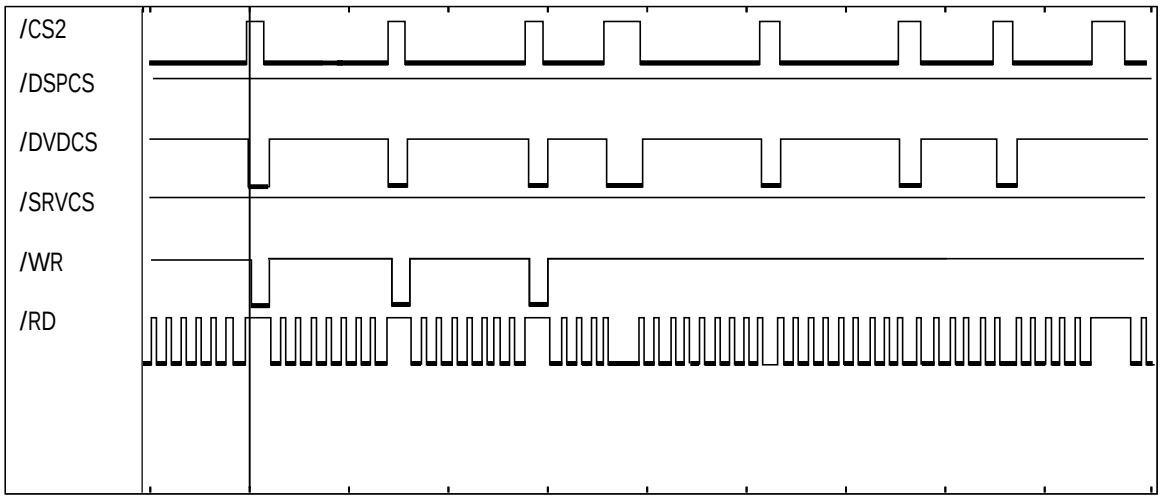


Fig. 5-15

- CH1 : CS2 (MIC8-22, EPROM CHIP SELECT)
- CH2 : DSPCS (DIC1-2, DATA PROCESSOR CHIP SELECT)
- CH3 : DVDCS (VIC1-206, A/V DECODER CHIP SELECT)
- CH4 : SRVCS (SIC1-10, DIGITAL SERVO CHIP SELECT)
- CH5 : WR (MIC1-73, MICOM OUTPUT WRITE SIGNAL)
- CH6 : RD (MIC1-72, MICOM OUTPUT READ SIGNAL)

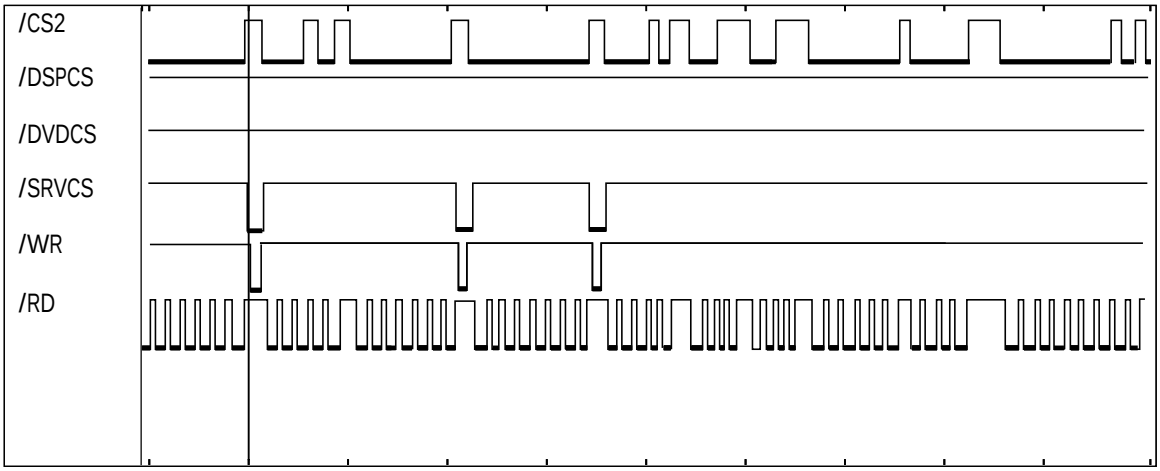


Fig. 5-16

- CH1 : CS2 (MIC8-22, EPROM CHIP SELECT)
- CH2 : DSPCS (DIC1-2, DATA PROCESSOR CHIP SELECT)
- CH3 : DVDCS (VIC1-206, A/V DECODER CHIP SELECT)
- CH4 : SRVCS (SIC1-10, DIGITAL SERVO CHIP SELECT)
- CH5 : WR (MIC1-73, MICOM OUTPUT WRITE SIGNAL)
- CH6 : RD (MIC1-72, MICOM OUTPUT READ SIGNAL)

5-4 Servo

5-4-1 Outline

SERVO system of DVD is divided into Focusing SERVO, Tracking SERVO, SLED Linked SERVO and CLV SERVO (DISC Motor Control SERVO).

1) Focusing SERVO
Focuses the optical spot output from object lens onto the disc surface. Maintains a uniform distance between object lens of Pick-up and disc (for surface vibration of disc).

2) Tracking SERVO
Make the object lens follow the disc track in use of tracking error signal (created from Pick-up).

3) SLED Linked SERVO
When the tracking actuator inclines outwardly as the object lens follows the track during play, the SLED motor moves slightly (and counteracts the incline).

4) CLV SERVO (DISC Motor Control SERVO)
Controls the disc motor to maintain a constant linear velocity (necessary for RF signal).

5-4-2 Block Diagram

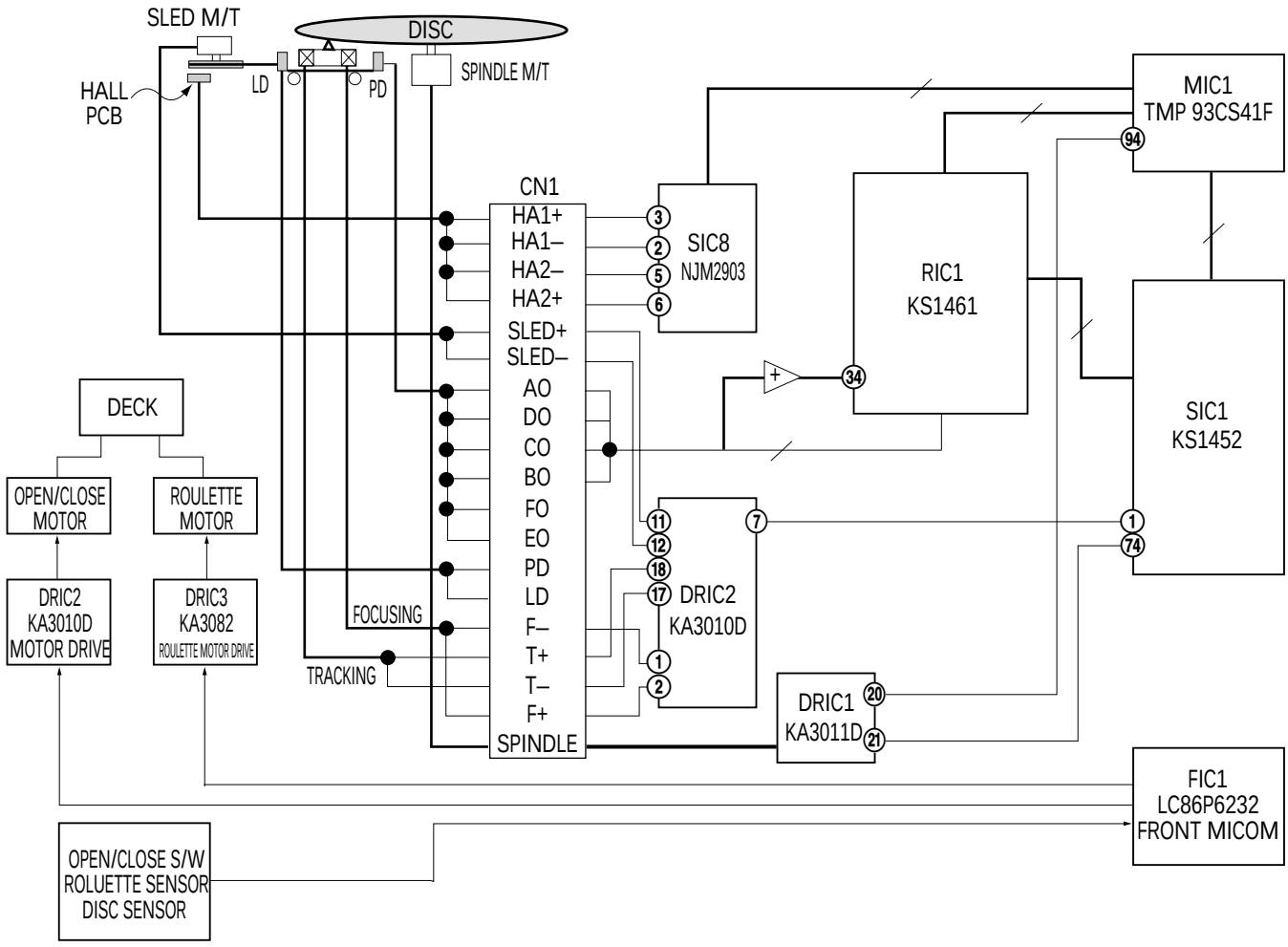


Fig. 5-17

5-4-3 Operation

1) FOCUSING SERVO

(1) FOCUS INPUT

The focus loop is changed from open loop to closed loop, and the triangular waveform moves the object lens up and down (at pin 75 of SIC1 during Focus SERVO ON.) At that time, S curve is input to pin 65 of SIC1.

ABAD (pin 39 of RIC1) signal, summing signal of PD A, B, C, D, is generated, and zero cross(2.5V) point occurs when S curve is focused and ABAD signal exceeds a preset,constant value. The focus loop is changed to closed loop, and the object lens follows the disc movement, maintaining a constant distance from the disc. (these operations are same in CD and DVD).

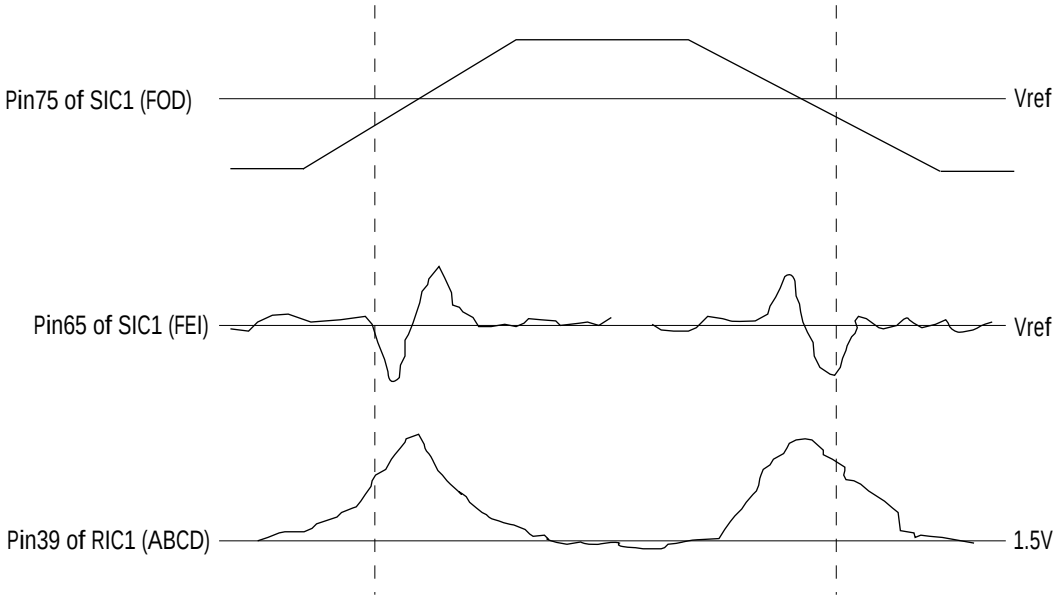


Fig. 5-18

(2) PLAY

When focus loop closes the loop during focus servo on, both pin 65 and pin 75 of SIC1 are controlled by VREF voltage (approx. 2.5V), and pin 1, 2 of DRIC2 are approximately 4.5V.

2) TRACKING SERVO

(1) NORMAL PLAY MODE

❶ For DVD

Composite : The signal output from PD A, B, C, D of Pick-up, the tracking error signal (pin36 of RIC1) uses the phase difference of A+C and B+D in RIC1, and inputs to terminal 64 of SIC1. Then, it is output to SIC1 pin 76 via digital equalizer, and applied to the tracking actuator through DRIC2.

Pins 17, 18 of SIC1 are controlled by VREF(approx. 2.5V) during normal play.

Meanwhile, DVD repeats the track jump from 1 to 4 in inner direction at normal play (because data- read speed from disc is faster than data output speed on screen).

❷ For CD, VCD

Receive the signal output through E, F of Pick-up, from RIC1. The tracking error signal is similar to DVD.

(2) SEARCH Mode :

Search mode : Fine seek,(Moving the tracking actuator slightly little below 255 track) and coarse search, moving much in use of sled motor. The coarse search will be described in sled linked servo and now, the fine seek is explained shortly.
If the object lens is located near target, cut off the tracking loop and give the control signal as many as desired count to move the tracking actuator via SIC1 pin 76 terminal(TRD).

3) SLED LINKED SERVO

- Normal play mode
  Move SLED motor slightly by means of PWM signal in SIC1 pin 73, as the tracking actuator moves along with track during play. Control to move the entire Pick-up as the tracking actuator moves.

- Coarse serach mode
  In case of long-distance search (such as chapter serach), SIC1 uses sled FG (SIC8 pin 1, 7, which is generated) by rotation of sled motor via hall PCB. Then, read ID and compute the existing track count after input of next track. If the existing track count is within fine seek range, tracking begins using fine seek.

4) CLV SERVO(DISC MOTOR CONTROL SERVO)

Input RF signal (from Pick-up) to SIC1 pin59. Detect SYNC signal from RF in SIC1, and output PWM signal to SIC1 pin 55 for constant linear velocity.

5-5 DVD Data Processor

5-5-1 Outline

DIC1(KS1453) performs Sync detection, EFM/EFM demodulation and error correction and Spindle motor control (CLV control) after inputting sliced EFM signal of RF signal at disc playback and EFM read clock (PLCK) signal generated from PLL. Outputs data which converted to the last audio and video from A/V decoder(VIC1). KS1453 uses external memory(4M DRAM) as buffer as well as for error correction and carries out Variable Bit Rate transfer function. VBR function uses the external buffer as buffer to absorb the difference of transfer rate occurring because the transfer rate of disc playback is faster than data transfer rate demanded by A/V decoder(Video/Audio Signal Process Chip).
In case of general disc refresh, the memory is almost filled up periodically. It is because Write rate to memory after disc playback and signal process is faster than Read of A/V decoder. When the memory is filled, this status is reported by interrupt to main micom, which controls the servo to kick back the pick-up to the previous track after memorizing the last data read from disc until now. It takes some times to jump to the previous track and return to the original(jump location) again. The memory will have an empty space because A/V decoder reads out data of memory.
When the memory has an empty space, where data can be processed and written and the pick-up correctly gets to the original location(before kick back location) again, it reads data again avoids the interrupt of data read previously. The basic operation repeats to perform as described above.

5-5-2 Block Diagram

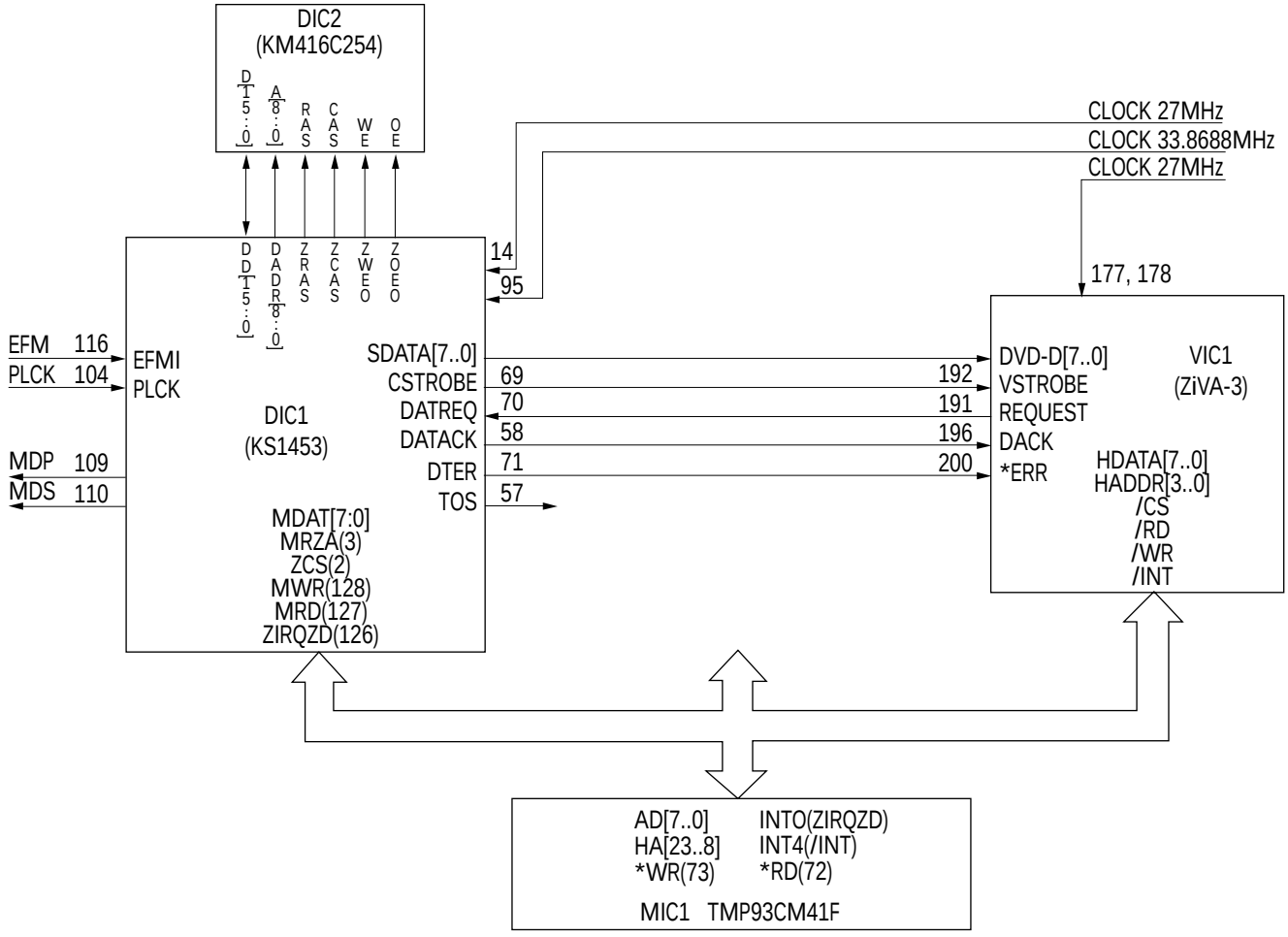


Fig. 5-19

5-5-3 Waveform Description

It measures the timing that data processed in DIC1 at DVD playback.

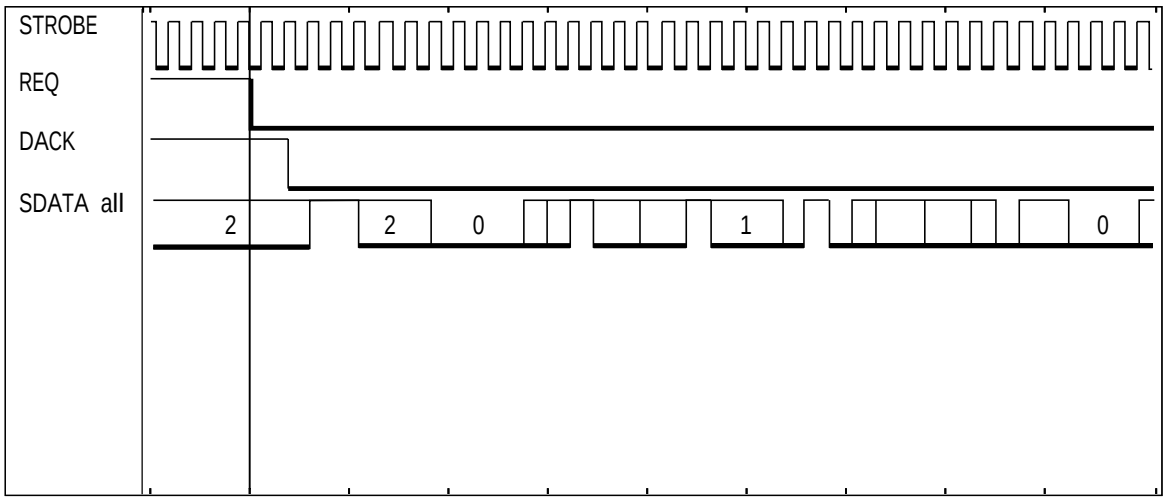


Fig. 6-20

- CH1 : STROBE (DIC1-69, CLOCK)
- CH2 : REQ (DIC1-70, DATA REQUEST)
- CH3 : DACK (DIC1-58, DATA ACKNOWLEDGE)
- CH4 : SDATA (DIC1-60~67, DATA)

5-6 Video

5-6-1 Outline

VIC50 sends VSYNC and HSYNC from VIC1(A / V decoder) and receives 8bit video data.
VIC50 does RGB encoding, copy guard processing and D / A conversion of 8bit video data inputted from VIC1(A / V decoder) by control of MIC1(Micom).
Video signal converted into analog signal is outputted via amplifier of analog part.

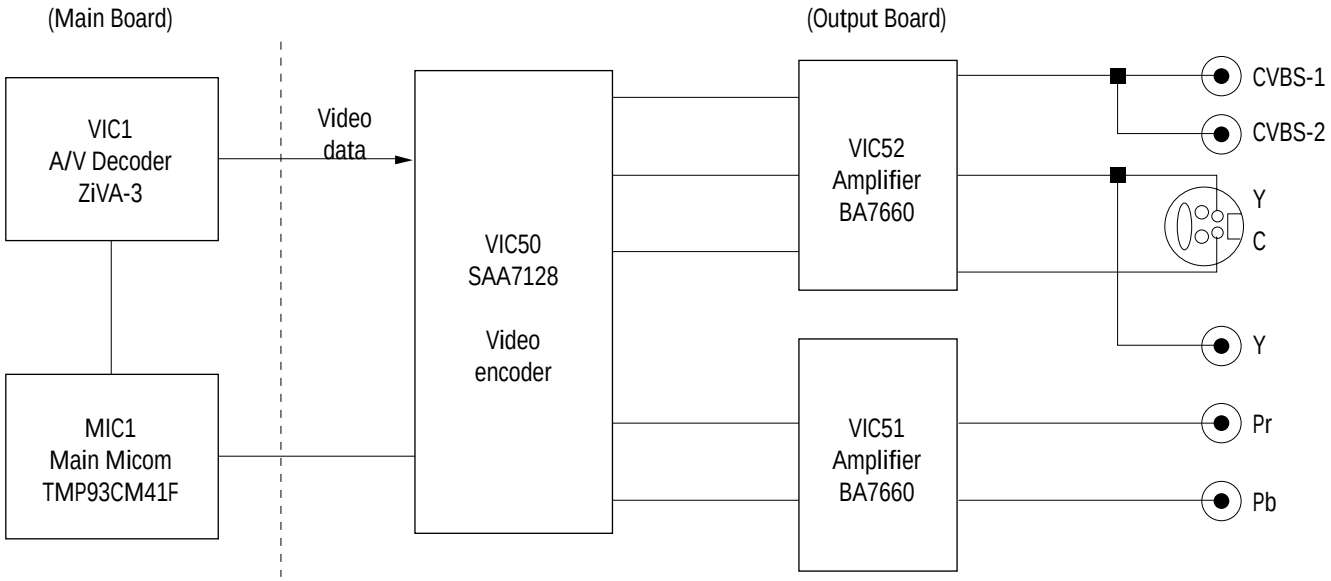


Fig. 5-21 Video Output Block Diagram

5-6-2 NTSC/PAL Digital Encoder (VIC50 : SAA7128)

VIC50 inputted from pin4 with 27MHz generates HSYNC and VSYNC which are based on video signal. Each HSYNC and VSYNC outputted from Pin8 and Pin7 are inputted to Pin157 and Pin158 of A / V decoder VIC1(ZIVA-3). VIC1 is the synchronous signals with the video signal and control the output timing of 8bit video signal of ITU-R601 format. (Pin180, 182, 184 ~ 189 (MSP))
8bit data is inputted to Pin9(MSB) and Pin16 of VIC50 and the inputted data is demuxed with each 8bit of Y / R-Y / B-Y. The separate signal is encoded to NTSC or PAL by control of MIC1. The above signals, that is CVBS (Composite Video Burst Synchronized)(Pin30), S-Video (Y:Pin27, C:Pin24), Y / Pb / Pr(Pin27 / Pin29 / Pin23) and GB(Pin26 / Pin29 / Pin23). In course of encoding, 8bit data can extend to 10bit or more. To convert the extended data to quantization noise as possible, VIC50 adopts 10bit D / A converter. VIC50 perform video en-coding as well as copy protection.

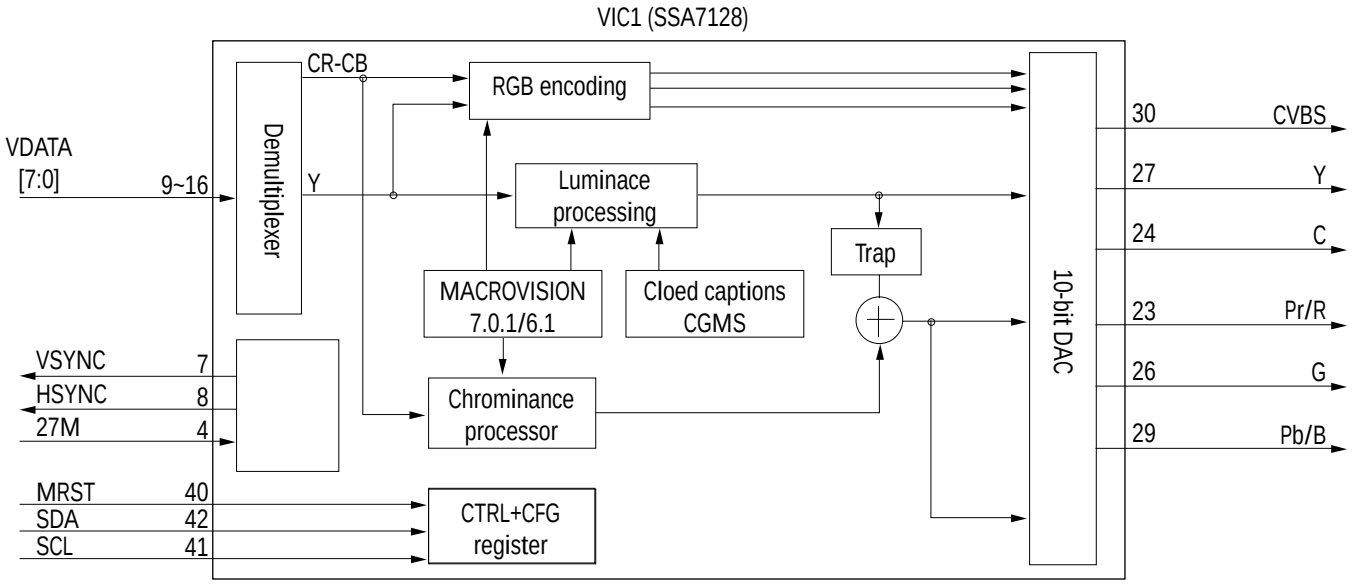


Fig. 5-22

5-6-3 Amplifier (VIC51, VIC52 : BA7660)

VIC51 and VIC52 are 6dB amplifier. Based on CVBS signal, the final output level must be 2Vpp without 75ohm terminal resistance. Because the level of video encoder output is only 1.1Vpp, the level is adjusted with the special amplifier. When mute of pin1 is high active, if the pin is floating and connected to power, the output signal is never outputted. CVBS, Y, C, Cr and Cb outputted from video encoder are inputted to VIC52 (Pin7, Pin2 and Pin4) and VIC51 (Pin7 and Pin4) respectively and outputted from VIC52 (Pin10, Pin15 and Pin13) and VIC51 (Pin10 and Pin 13). Pin9, Pin12 and Pin14 of VIC51 and VIC52 are feedback pin to SAG compensation(DC characteristic compensation of signal). Resistance(VR3-VR14) which is inserted to input terminal is bias resistance for input offset. The signal to which gain is adjusted by amplifier is outputted from jack via 75ohm.

5-6-4 Scart Jack Output (PAL Only)

The AV1 of scart jacks is used for connecting a TV or other display devices and the AV2 for a VCR or other players. When the DVD player is turned on, the RGB, CVBS, or S-VIDEO is outputted to AV1 and CVBS to AV2. When the player is turned off, CVBS signal of the TV is inputted and CVBS or RGB of a VCR inputted via AV2 is outputted. In case of AV2, the reverse signal flow to that.
Switching of power on/off is controlled by SCIC1, SCIC2, and SCIC5.
The control signal (Pin 9,10,11) of SCIC1 and SCIC2 is outputted from PIN100 of FIC1 and connected to the signal(Pin 4) inverted by FIC3.
The control signal(Pin 9,10,11) of SCIC5 is also outputted from Pin100 of FIC1 and inverted again by SCQ8.
According to the characteristics that SCART Jack is supplied same pins for the output of CVBS signal and Y signal and for the R signal and C signal, SCIC3 lets the user select two signals in setup menu.
This control signal (Pin 9,10,11) of the switch is outputted from Pin 92 of FIC1.
The signal selected by switch is amplified by SIC4 and SIC6 and outputted through the SCART jack.
The scart jack has the function select signal (Pin 8 of AV1) that the TV can select automatically RF and the external video signal.
SCQ1 to SCQ7 are the circuit to point, FIC1 (Pin100, 94) controls. When the TV aspect ratio is 4/3 or 16/9, it is outputted 4.5 ~ 7V or 9.5 ~ 12V each. But, when the DVD video source is 16/9 and 16/9 wide is selected in setup menu, 4.5 ~ 7V is outputted. Otherwise, 9.5 ~ 12V is outputted.
When the player is turned off, the TV works with function selection by output signal of VCR in relation of SCQ9 and SCQ10.
RGB control signal (Pin 16 of AV1) is outputted that the TV can select between RGB and CVBS.
SCQ11 ~ SCQ14 and SCQ17 are for RGB control and controlled by FIC1 (Pin91).
When the player is turned off, receives VCR input (Pin 37 of AV2) and buffers in this circuit and then outputs to Pin 16 of AV1.

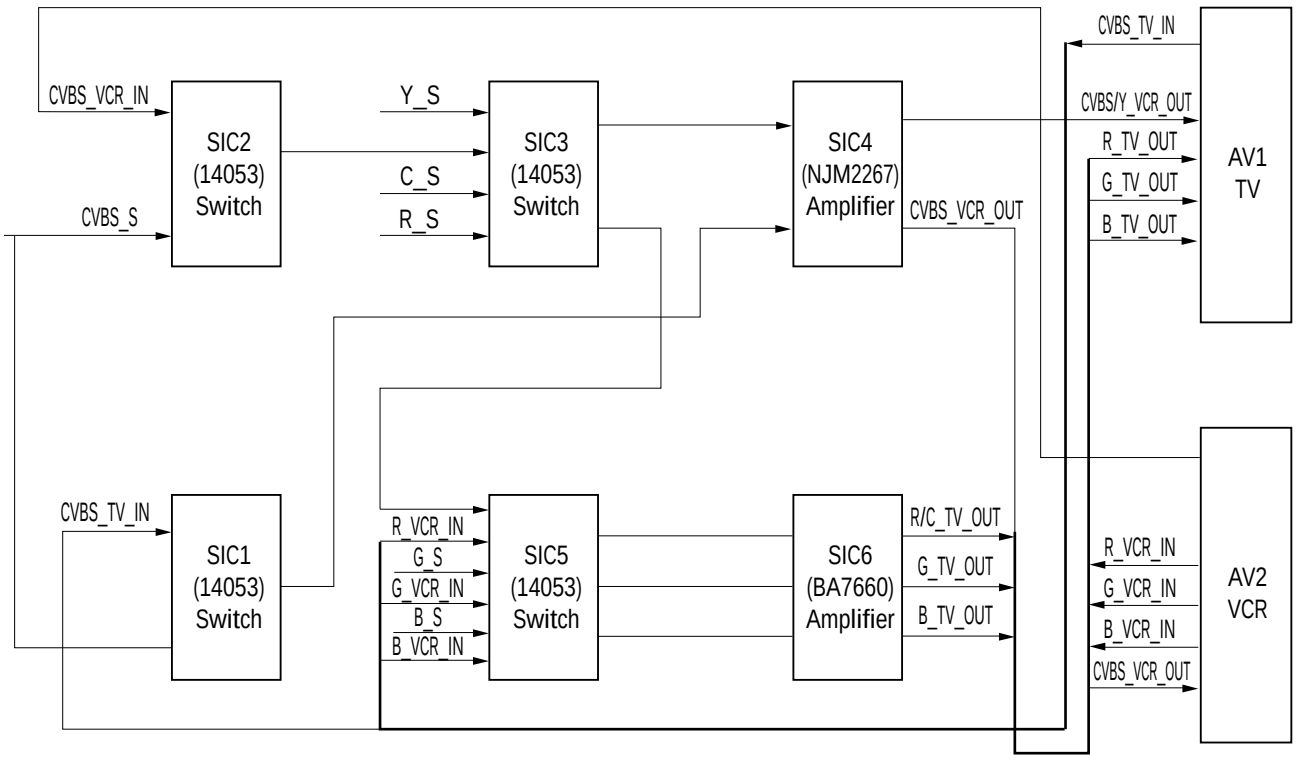


Fig. 5-23

5-7 Audio

5-7-1 Outline

The four data (Data 0~3) outputted from A/V decoder (VIC1 ; ZiVA-3) are supplied to DATA 0 for 2-channel mixed audio output and to DATA 1~3 for Analog audio output (5.1-channel).
The audio data (0~3) transmitted from A/V decoder (VIC1 ; ZiVA-3) are converted into analog signal via audio D/A converter and outputted via post filter and amplifier.
CD and VCD are outputted with only 2 channels audio data and transmit them to Data 0 and Data 1.
Front L/R channel is outputted in mixed audio output (L/R output) and analog audio output and surround L/R, center and subwoofer aren't outputted.
If DVD of 2 channels source disc is used, it is outputted by the same way with CD and VCD.
If 5.1-channel source disc, front L/R channel is outputted in Data 1, Surround L/R in Data 2 and Center/Sub-woofer in Data 3. At that time, 5.1 channel can be downmixed in 2 channel in Data 0.

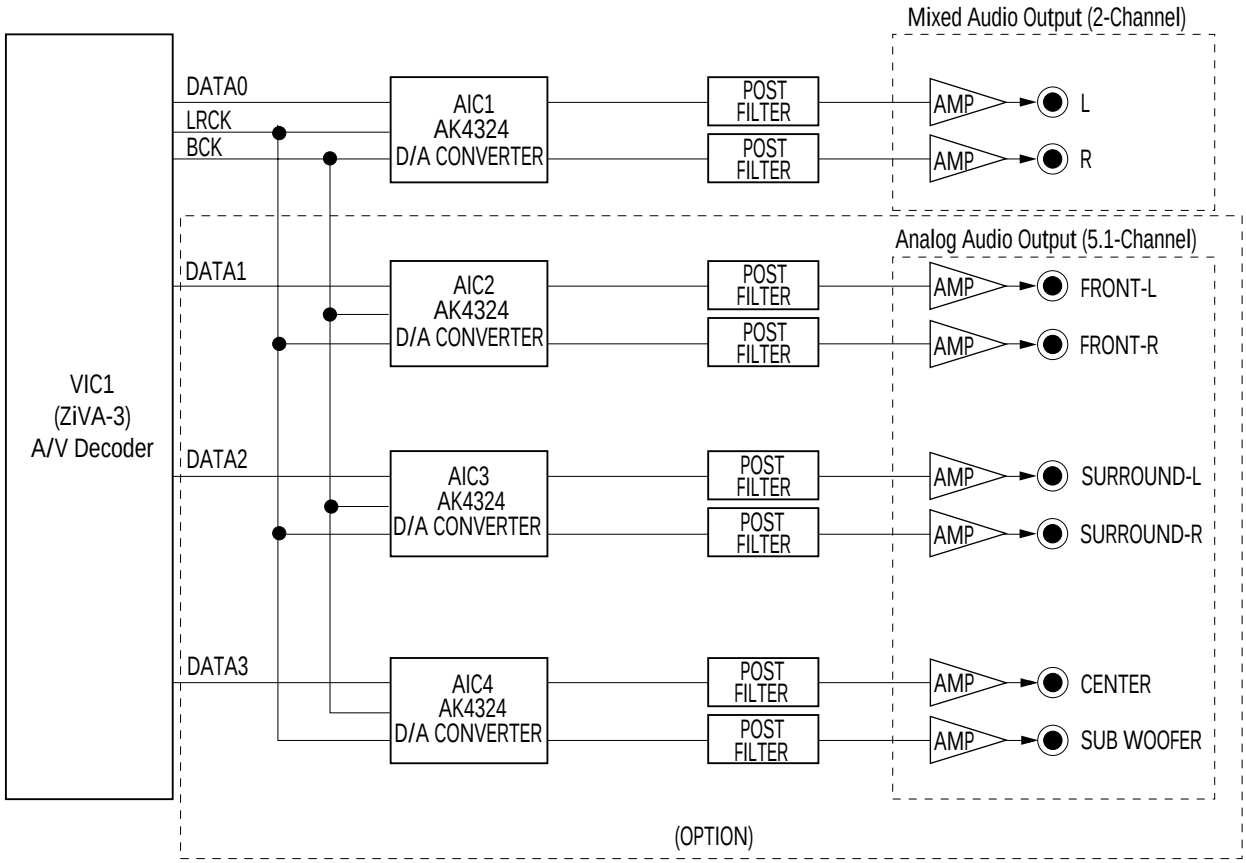


Fig. 5-24 Audio Output Block Diagram

5-7-2 DVD Audio Output

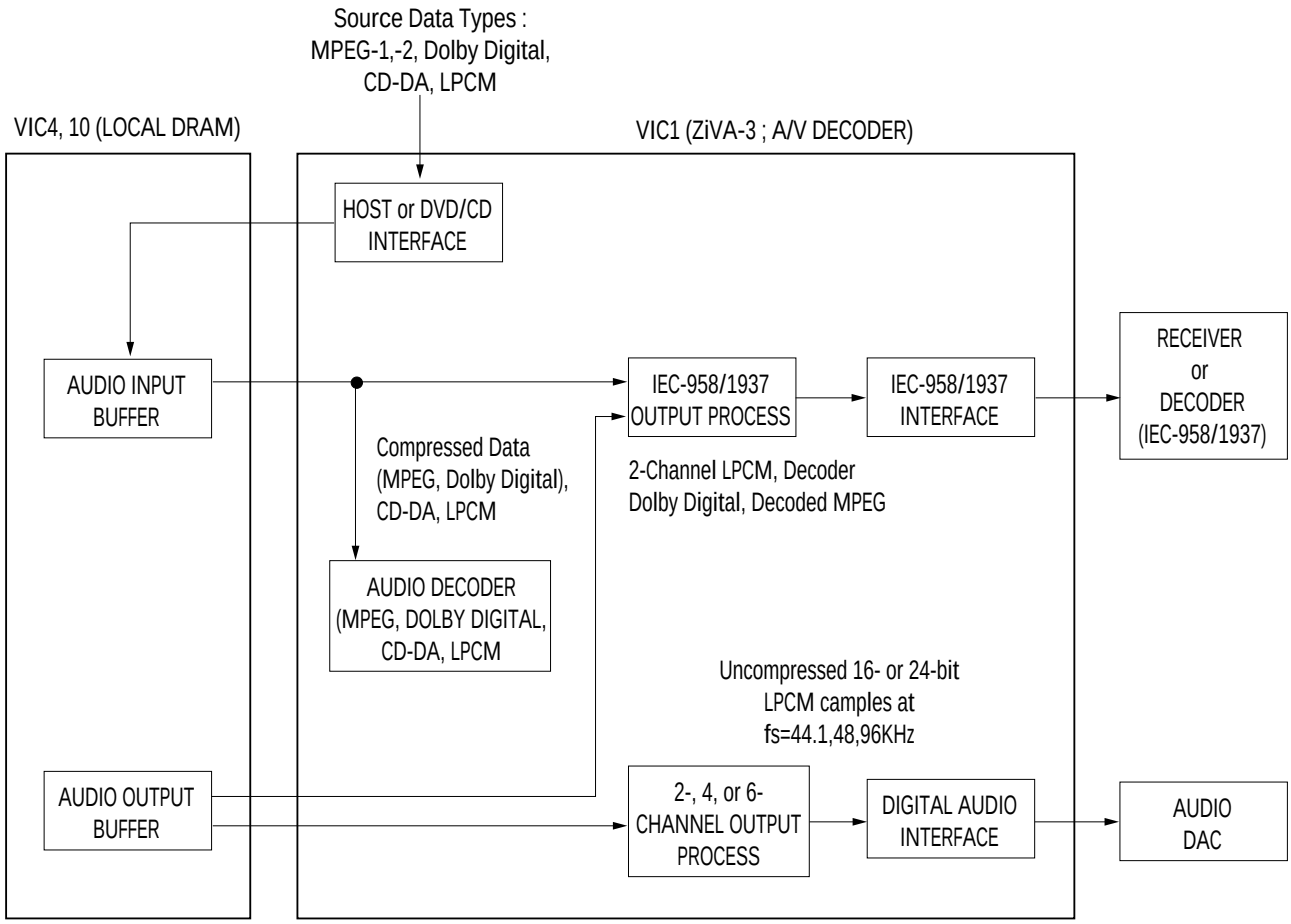


Fig. 5-25 Audio Decoder and Output Interface Datapath

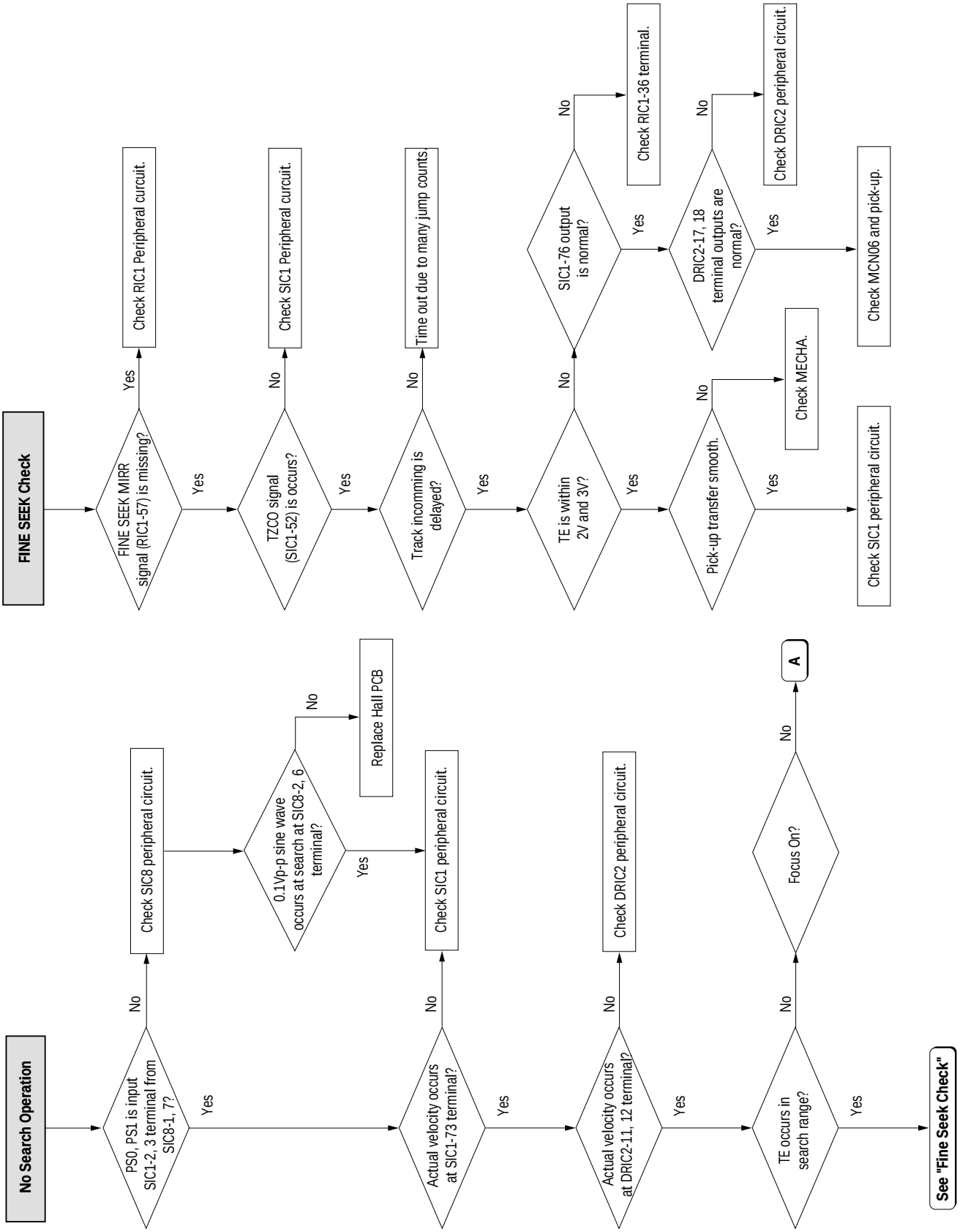
1) Compressed Data

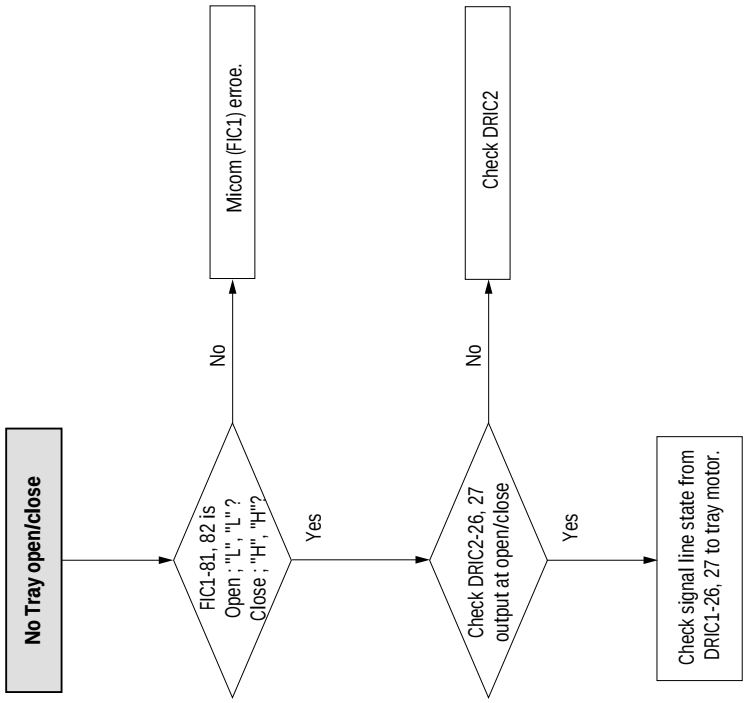
The audio data inputted to VIC1 (ZiVA-3) A / V decoder is divided into compressed data and uncompressed data. It is compressed data that is compressed with multi-channel audio data such as Dolby digital, MPEG, DTS, etc. The compressed data inputted to VIC1 (ZiVA-3) is converted into the uncompressed data of 2, 4, and 6 channels through ZiVA-3 built-in audio decoder and is outputted to Data 0, 1, 2, and 3 through digital audio interface. The compressed data is transmitted to external AC-3 amplifier or MPEG / DTS amplifier as IEC-958 / 1937 transmission data format compressed by ZiVA-3 built-in IEC-958 output process.

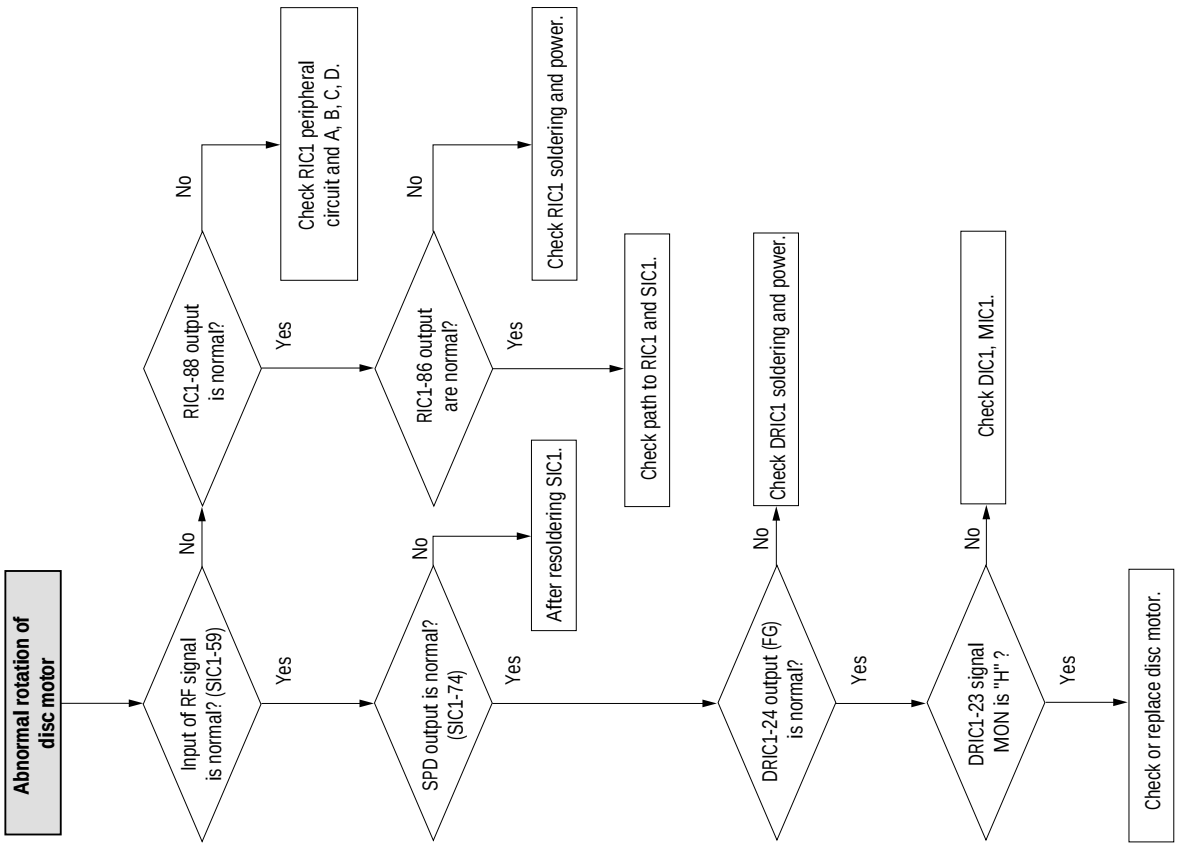
2) Uncompressed Data

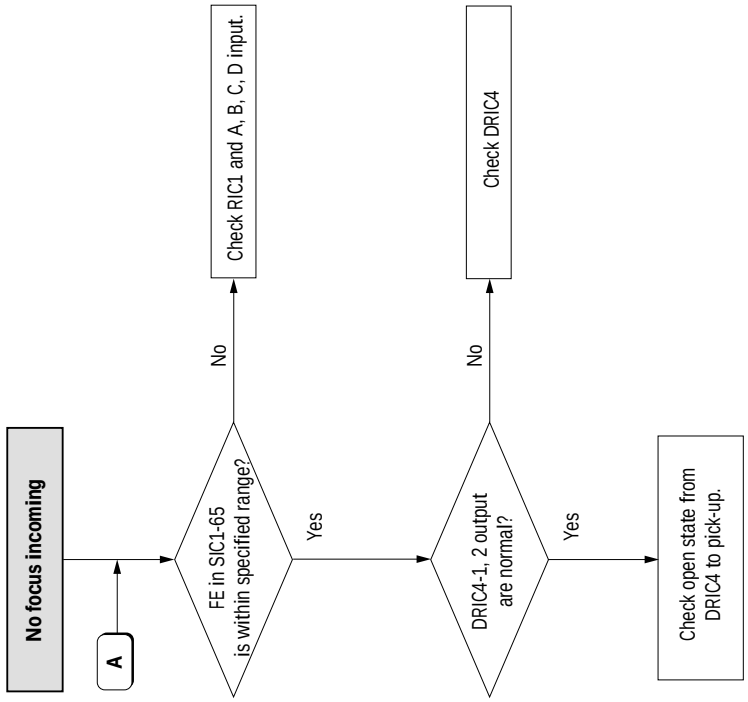
The uncompressed data is that data isn't compressed, so it is called CD-DA, LPCM data.
The 2 channels data is converted through audio decoder 2-channel data and Data 0 and Data 1 are outputted in digital audio interface.Via IEC-958 output process, they is transmitted to digital amplifier or AC-3 / MPEG / DTS amplifier built in the external digital input source with IEC-958 / 1937 transmission format.

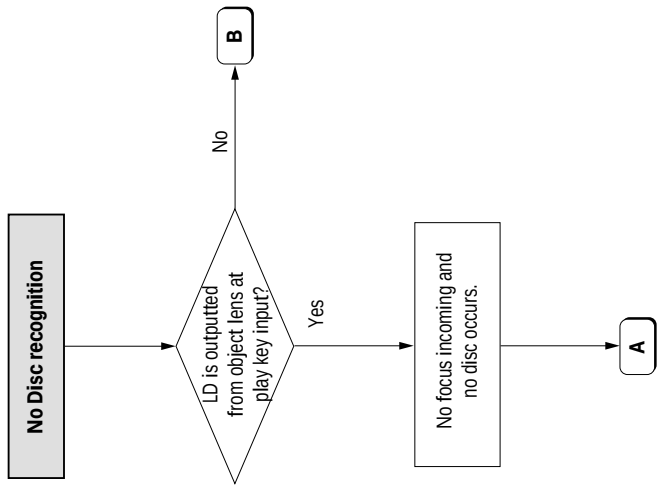
6. Troubleshooting

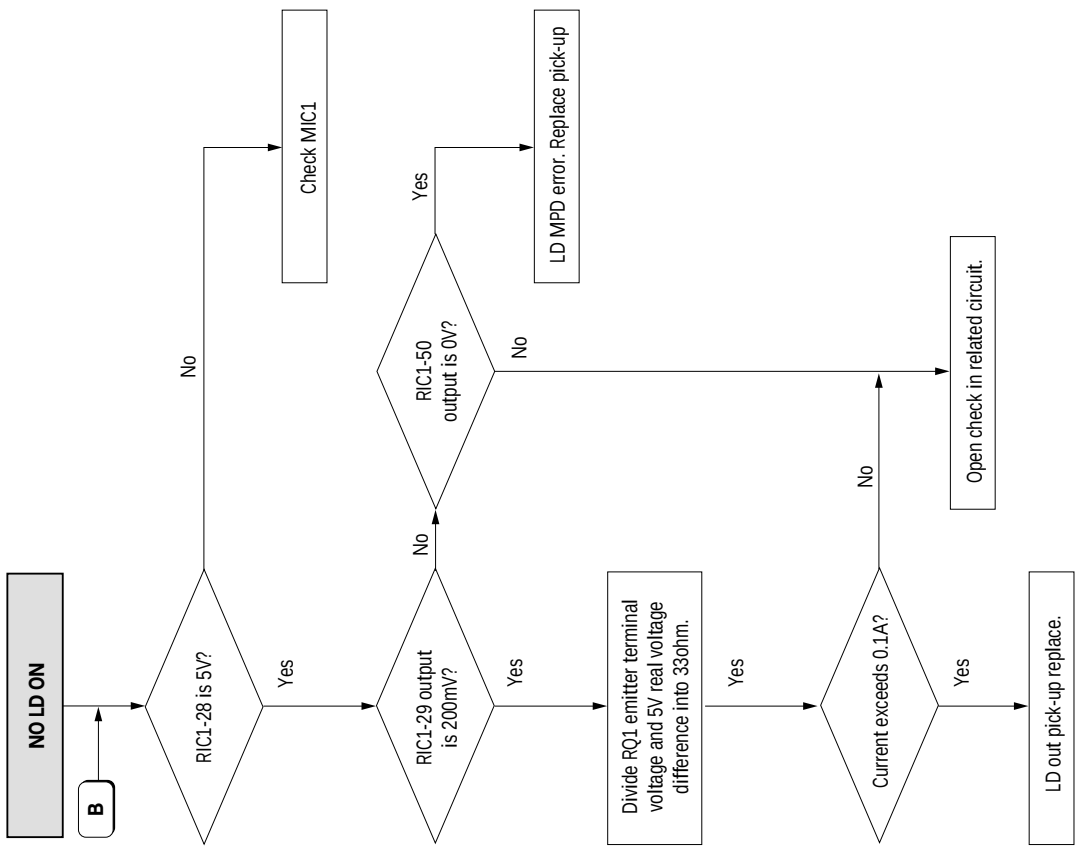


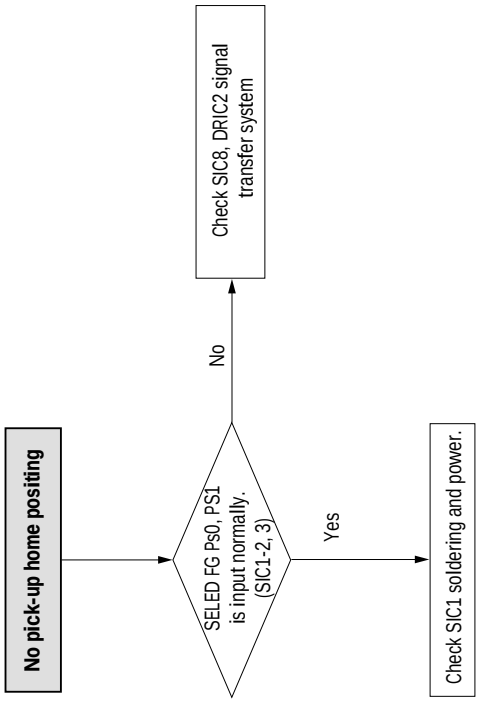

No Tray open/close
FIC1-81, 82 is
Open ; "L", "L" ?
Close ; "H", "H"?
No
Micom (FIC1) erroe.
Yes
Check DRIC2-26, 27
output at open/close
No
Check DRIC2
Yes
Check signal line state from
DRIC1-26, 27 to tray motor.

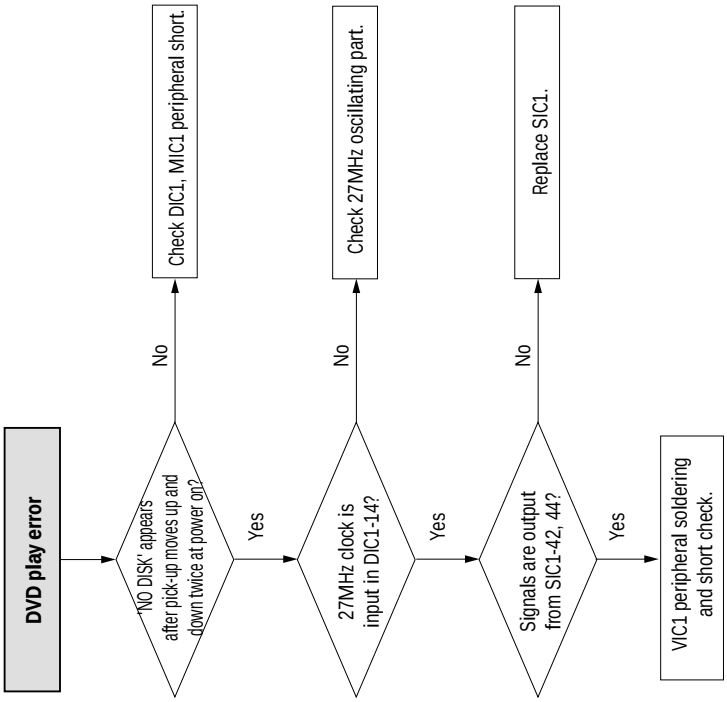

Abnormal rotation of
disc motor
Input of RF signal
is normal? (SIC1-59)
No
RIC1-88 output
is normal?
No
Check RIC1 peripheral
circuit and A, B, C, D.
Yes
RIC1-86 output
are normal?
No
Check RIC1 soldering and power.
Yes
Check path to RIC1 and SIC1.
Yes
SPD output is normal?
(SIC1-74)
No
After resoldering SIC1.
Yes
DRIC1-24 output (FG)
is normal?
No
Check DRIC1 soldering and power.
Yes
DRIC1-23 signal
MON is "H" ?
No
Check DIC1, MIC1.
Yes
Check or replace disc motor.

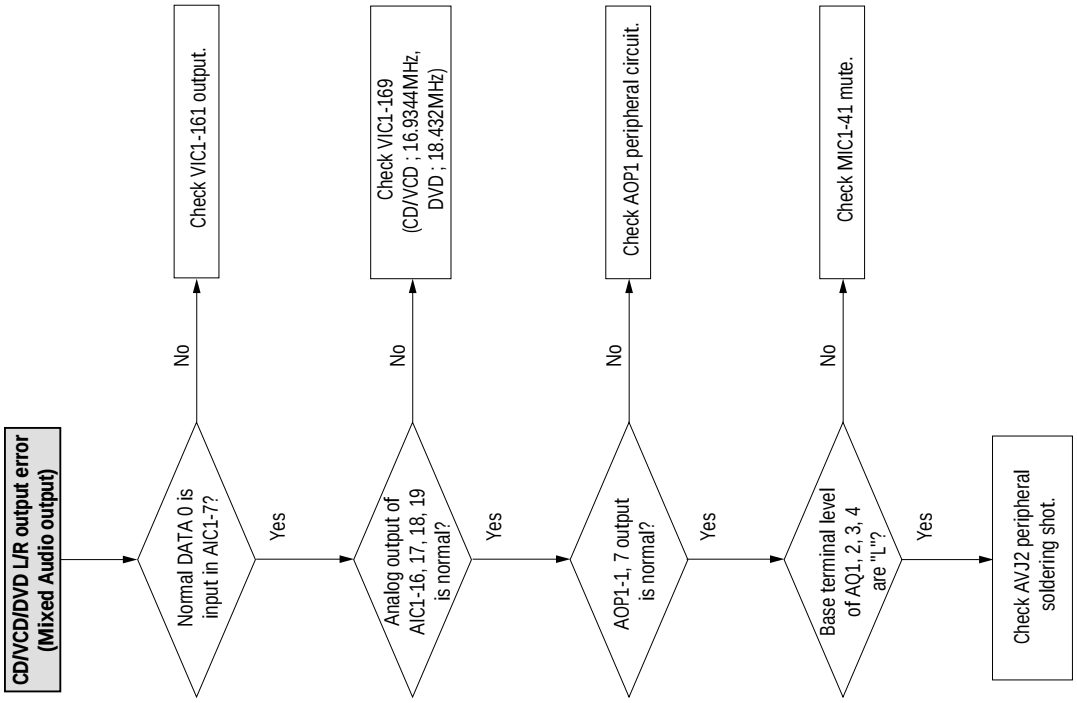

No focus incoming
A
FE in SIC1-65 is within specified range?
No
Check RIC1 and A, B, C, D input.
Yes
DRIC4-1, 2 output are normal?
No
Check DRIC4
Yes
Check open state from DRIC4 to pick-up.

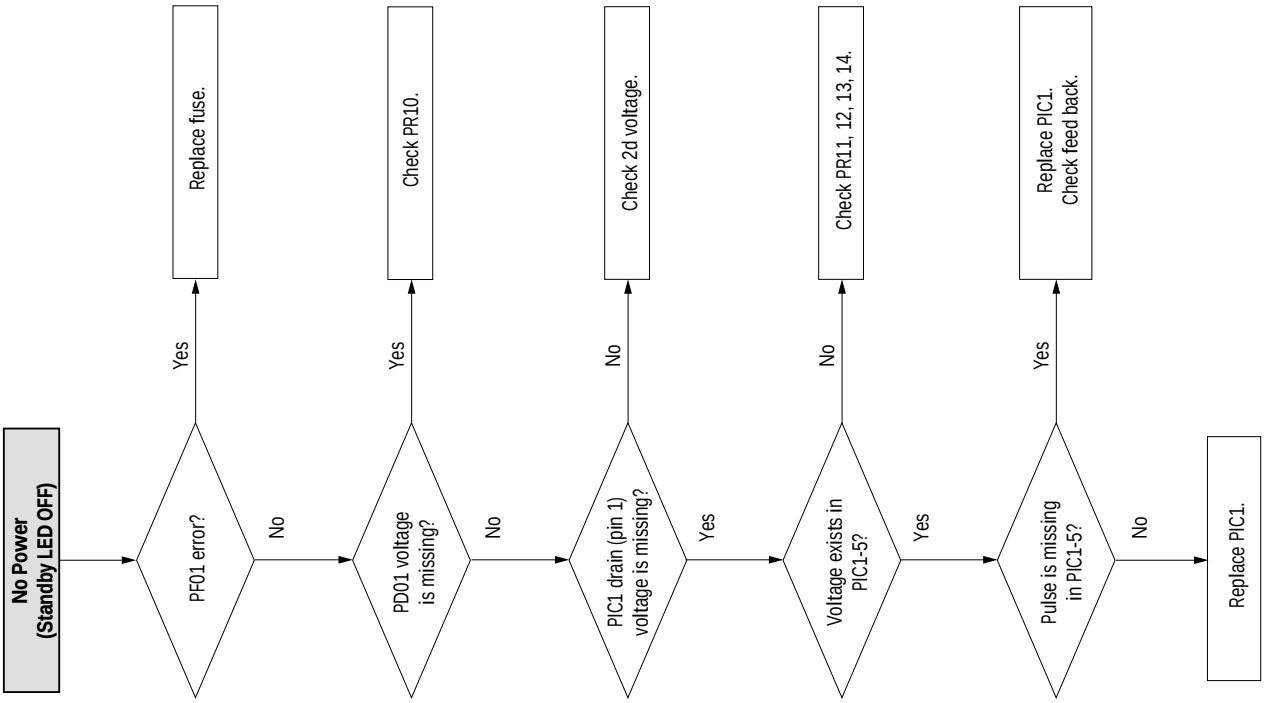

No Disc recognition
LD is outputted from object lens at play key input?
No
B
Yes
No focus incoming and no disc occurs.
A

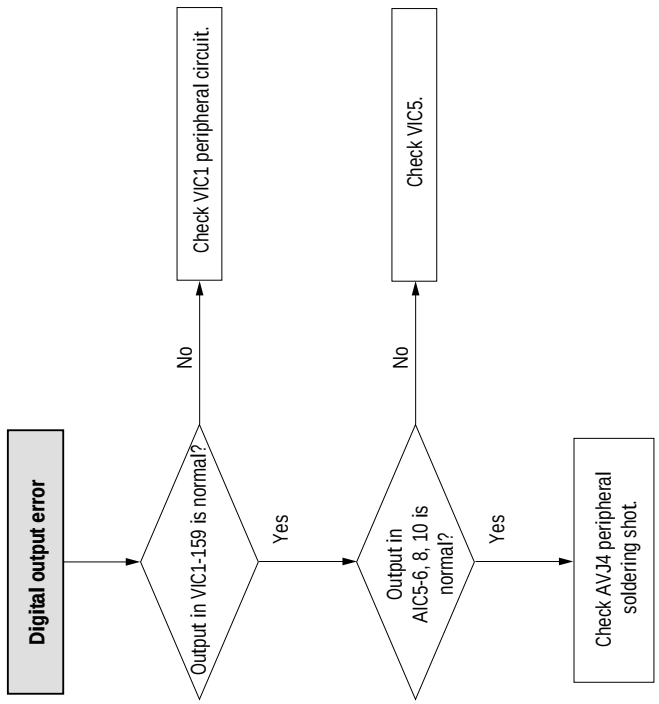

NO LD ON
B
RIC1-28 is 5V?
No
Check MIC1
Yes
RIC1-29 output is 200mV?
No
RIC1-50 output is 0V?
Yes
LD MPD error. Replace pick-up
No
Open check in related circuit.
Divide RQ1 emitter terminal voltage and 5V real voltage difference into 33ohm.
Yes
Current exceeds 0.1A?
No
Yes
LD out pick-up replace.

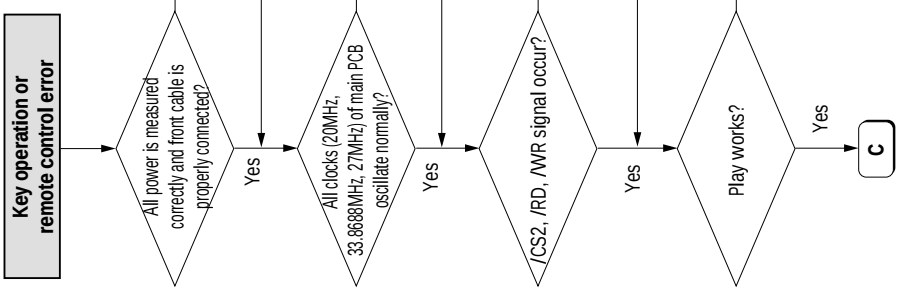

No pick-up home positing
SELED FG Ps0, PS1 is input normally. (SIC1-2, 3)
No
Check SIC8, DRIC2 signal transfer system
Yes
Check SIC1 soldering and power.

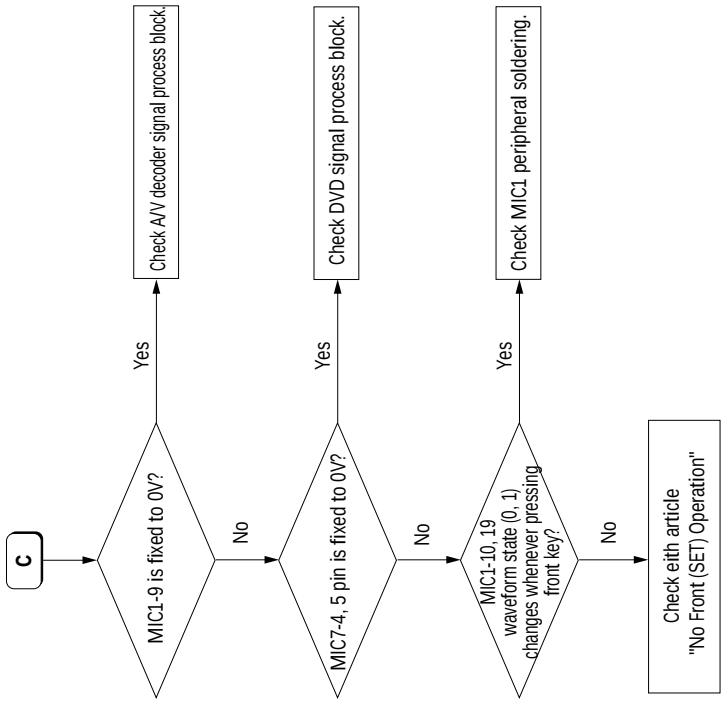

DVD play error
'NO DISK' appears after pick-up moves up and down twice at power on?
No
Check DIC1, MIC1 peripheral short.
Yes
27MHz clock is input in DIC1-14?
No
Check 27MHz oscillating part.
Yes
Signals are output from SIC1-42, 44?
No
Replace SIC1.
Yes
VIC1 peripheral soldering and short check.

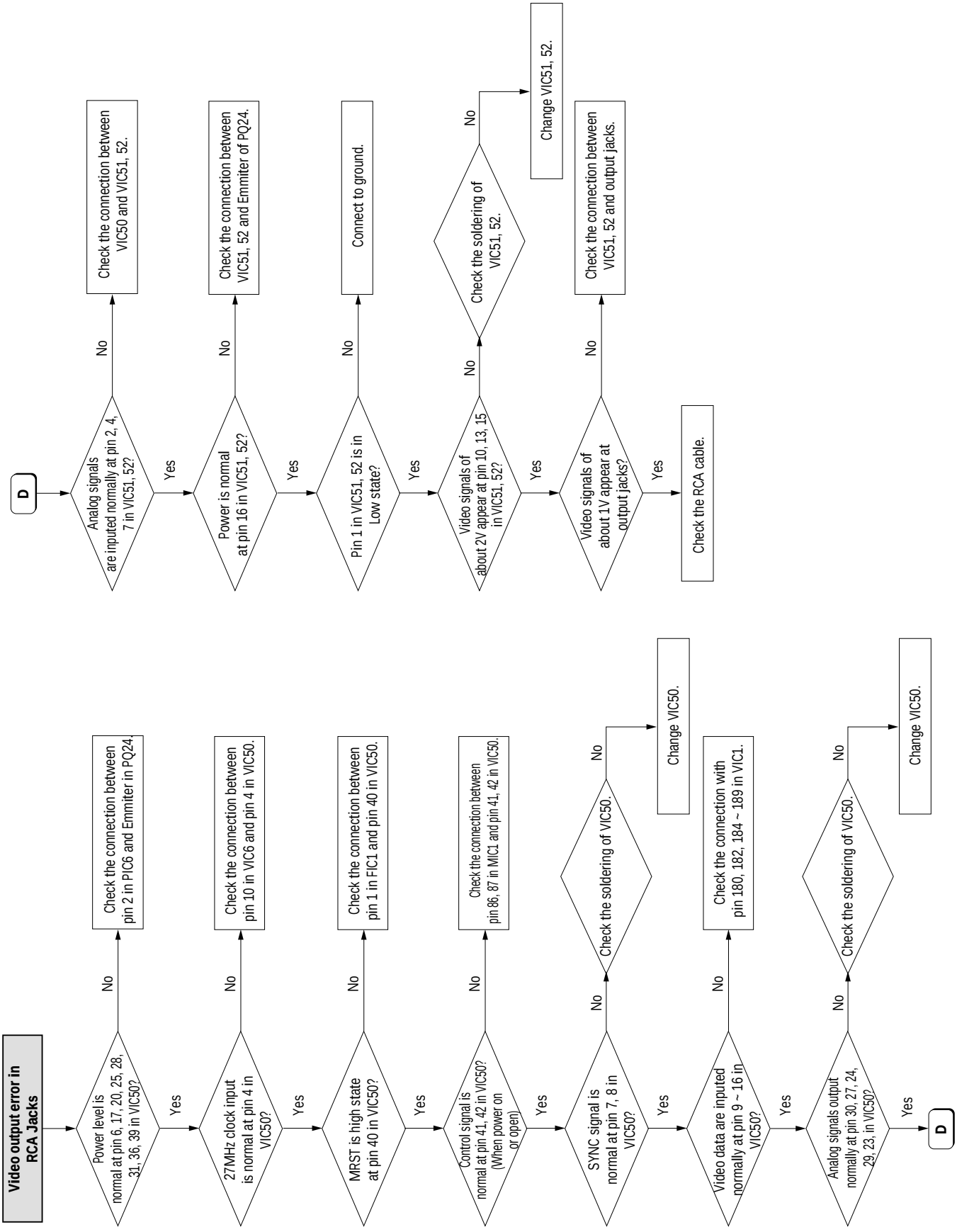

CD/VCD/DVD L/R output error (Mixed Audio output)
Normal DATA 0 is input in AIC1-7?
No
Check VIC1-161 output.
Yes
Analog output of AIC1-16, 17, 18, 19 is normal?
No
Check VIC1-169 (CD/VCD : 16.9344MHz, DVD : 18.432MHz)
Yes
AOP1-1, 7 output is normal?
No
Check AOP1 peripheral circuit.
Yes
Base terminal level of AQ1, 2, 3, 4 are "L"?
No
Check MIC1-41 mute.
Yes
Check AVJ2 peripheral soldering shot.

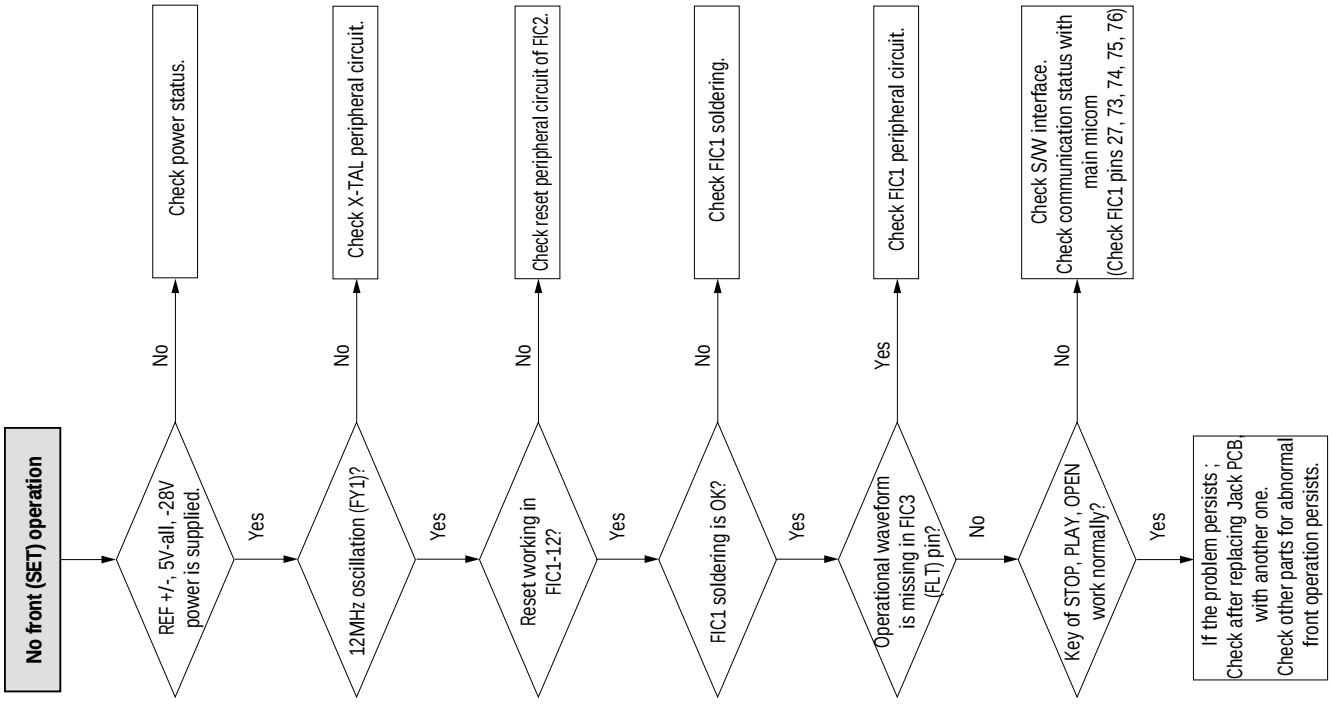

No Power
(Standby LED OFF)
PF01 error?
Yes
Replace fuse.
No
PD01 voltage
is missing?
Yes
Check PR10.
No
PIC1 drain (pin 1)
voltage is missing?
No
Check 2d voltage.
Yes
Voltage exists in
PIC1-5?
No
Check PR11, 12, 13, 14.
Yes
Pulse is missing
in PIC1-5?
Yes
Replace PIC1.
Check feed back.
No
Replace PIC1.


Digital output error
Output in VIC1-159 is normal?
No
Check VIC1 peripheral circuit.
Yes
Output in
AIC5-6, 8, 10 is
normal?
No
Check VIC5.
Yes
Check AVJ4 peripheral
soldering shot.


Key operation or remote control error
All power is measured correctly and front cable is properly connected?
Yes
Check A/V decoder signal process block.
Yes
All clocks (20MHz, 33.8688MHz, 27MHz) of main PCB oscillate normally?
No
Check all clock oscillating parts.
Yes
/CS2, /RD, /WR signal occur?
No
Check short pin out of micom common-bus (8-bit).
Check short or operating of micom.
Check soldering of micom and communication devices.
Yes
Play works?
No
Check VIC1 peripheral unit.
Yes
C


C
MIC1-9 is fixed to 0V?
Yes
Check A/V decoder signal process block.
No
MIC7-4, 5 pin is fixed to 0V?
Yes
Check DVD signal process block.
No
MIC1-10, 19 waveform state (0, 1) changes whenever pressing front key?
Yes
Check MIC1 peripheral soldering.
No
Check eith article "No Front (SET) Operation"


Video output error in RCA Jacks
Power level is normal at pin 6, 17, 20, 25, 28, 31, 36, 39 in VIC50?
No
Check the connection between pin 2 in PIC6 and Emmiter in PQ24.
Yes
27MHz clock input is normal at pin 4 in VIC50?
No
Check the connection between pin 10 in VIC6 and pin 4 in VIC50.
Yes
MRST is high state at pin 40 in VIC50?
No
Check the connection between pin 1 in FIC1 and pin 40 in VIC50.
Yes
Control signal is normal at pin 41, 42 in VIC50? (When power on or open)
No
Check the connection between pin 86, 87 in MIC1 and pin 41, 42 in VIC50.
Yes
SYNC signal is normal at pin 7, 8 in VIC50?
No
Check the soldering of VIC50.
No
Change VIC50.
Yes
Video data are inputed normally at pin 9 ~ 16 in VIC50?
No
Check the connection with pin 180, 182, 184 ~ 189 in VIC1.
Yes
Analog signals output normally at pin 30, 27, 24, 29, 23, in VIC50?
No
Check the soldering of VIC50.
No
Change VIC50.
Yes
D
D
Analog signals are inputed normally at pin 2, 4, 7 in VIC51, 52?
No
Check the connection between VIC50 and VIC51, 52.
Yes
Power is normal at pin 16 in VIC51, 52?
No
Check the connection between VIC51, 52 and Emmiter of PQ24.
Yes
Pin 1 in VIC51, 52 is in Low state?
No
Connect to ground.
Yes
Video signals of about 2V appear at pin 10, 13, 15 in VIC51, 52?
No
Check the soldering of VIC51, 52.
No
Change VIC51, 52.
Yes
Video signals of about 1V appear at output jacks?
No
Check the connection between VIC51, 52 and output jacks.
Yes
Check the RCA cable.


No front (SET) operation
REF +/-, 5V-all, -28V power is supplied.
No
Check power status.
Yes
12MHz oscillation (FY1)?
No
Check X-TAL peripheral circuit.
Yes
Reset working in FIC1-12?
No
Check reset peripheral circuit of FIC2.
Yes
FIC1 soldering is OK?
No
Check FIC1 soldering.
Yes
Operational waveform is missing in FIC3 (FLT) pin?
Yes
Check FIC1 peripheral circuit.
No
Key of STOP, PLAY, OPEN work normally?
No
Check S/W interface. Check communication status with main micom (Check FIC1 pins 27, 73, 74, 75, 76)
Yes
If the problem persists ; Check after replacing Jack PCB with another one. Check other parts for abnormal front operation persists.

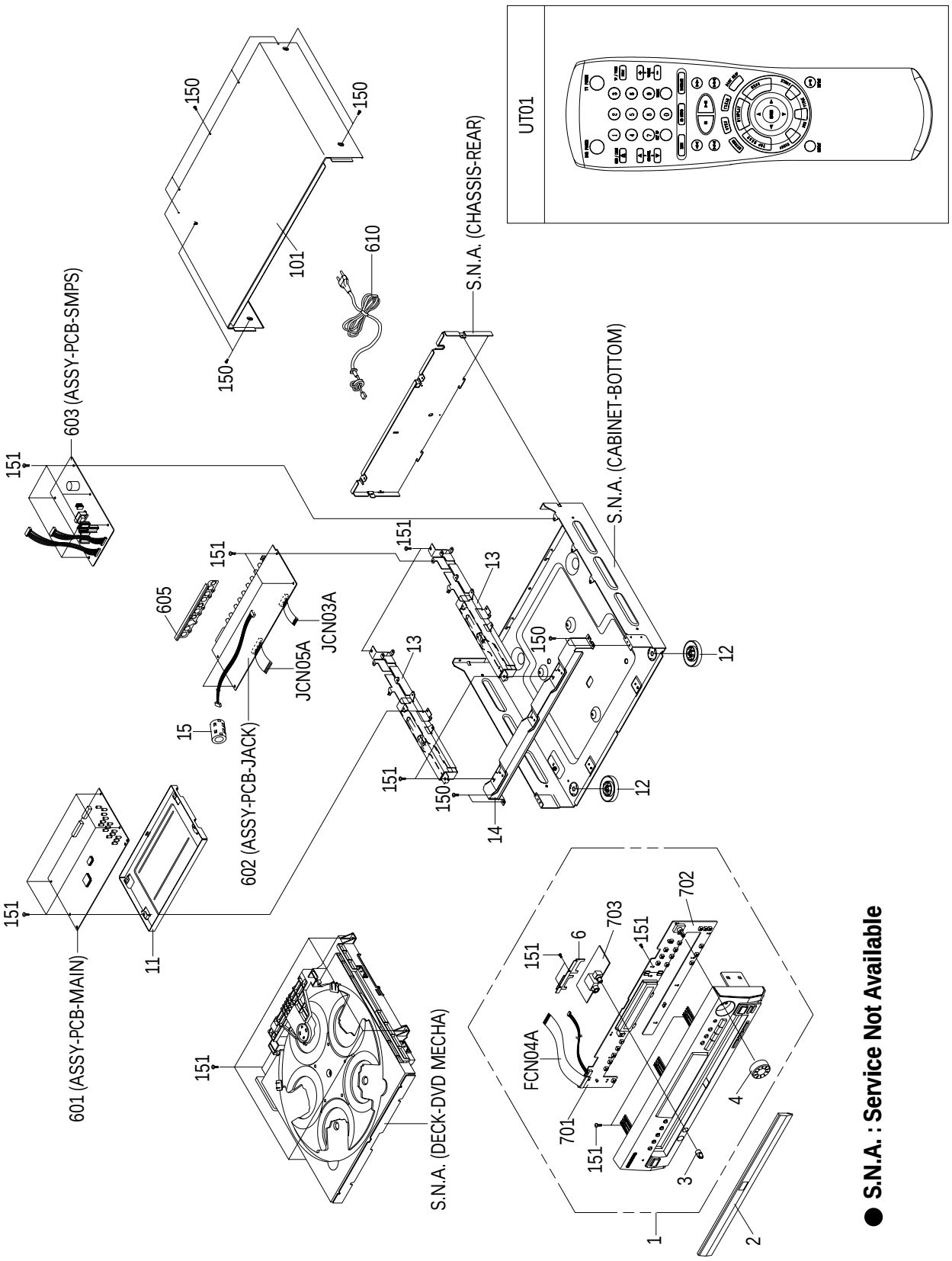
MEMO

7. Exploded View and Parts List

Page

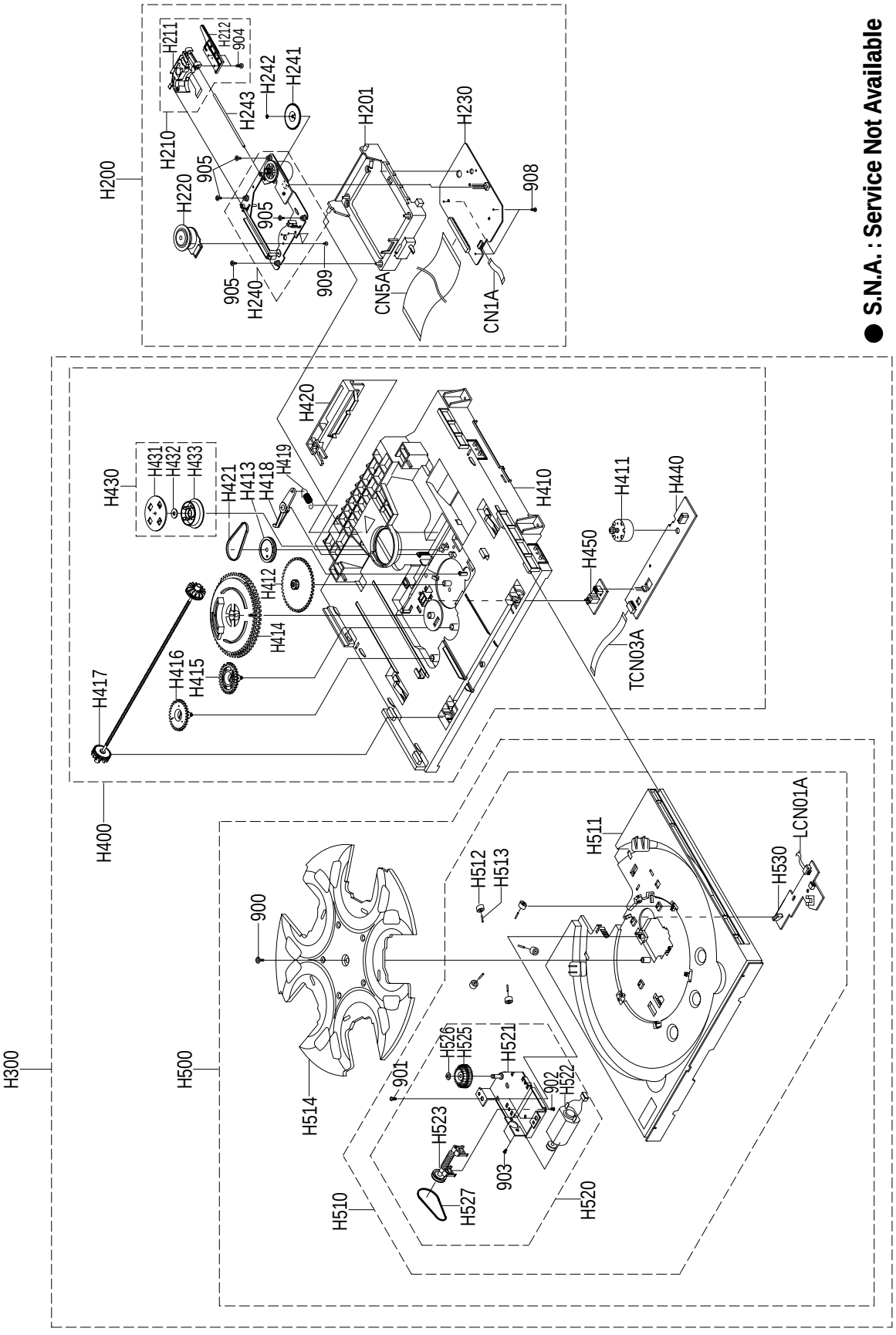
7-1 Cabinet Assembly - - -

7-1 Cabinet Assembly



Loc. No	Parts No.	Description ; Specification	Remark
1	AH97-00215D	ASSY-CABINET FRONT;DVD-C600	
2	AH97-00216C	ASSY-DOOR TRAY;DVD-C600	
3	AH64-11306M	KNOB-VOLUME;ABS 94HB BLK	
4	AH64-00302A	KNOB-JOG;-,ABS 94HB,-,BLK,-,DVD-C700	
6	AH61-00206A	BRACKET-JACK;-,SECC US,-,T1.0,-,-,DVD-C7	
11	AH61-00151A	CHASSIS-PCB;-,SECC US,-,T0.8,-,243*123,D	
12	AH64-80034A	FOOT-BOTTOM;-,ABS94,HB,T2,BLK,-,DVD-860K	
13	AH97-00296A	ASSY-BRKT PCB;RC5910P,-,THOMSON	
14	AH61-00133A	CHASSIS-FRAME;-,SECC US,-,T1.0,-,-,RC591	
15	3301-001368	FERRITE-CORE;AE,28X8,2X16.4 2000,2600GAUSS	
101	AH64-00203B	CABINET-TOP;-,PCM,-,0.625T,-,-,429*109*3	
150	6003-000275	SCREW-TAPTITE;BH,+,B,M3,L10,BLK,SWCH1018	
151	6003-000276	SCREW-TAPTITE;BH,+,B,M3,L10,ZPC(YEL),SWC	
601	AH92-00665A	ASSY-PCB-MAIN;DVD-C600,MAIN PCB	
602	AH92-00184A	ASSY-PCB-JACK;RC5910P,JACK PCB	
603	AH92-00537A	ASSY PCB-SMPS;DVD-C700,SMPS PCB	
605	AH63-00040A	GROUND-REAR;-,PBS,T0.2,-,DVD-909	
610	AH39-00034A	POWER CORD;KJ-10W,-,1.83M,CONNECTOR,	
701	AH92-00311A	ASSY-PCB-FRONT;DVD-C700,FRONT PCB	
702	AH92-00554A	ASSY PCB-KEY;DVD-C700/XAA,KEY PCB	
703	AH92-00555A	ASSY PCB-HEADPHONE;DVD-C700/XAA,HEADPHON	
FCN04A	3809-001155	CABLE-FLAT;30V,-20to+80C,300mm,24P,1mm,U	
JCN3A	3809-001154	CABLE-FLAT;30V,-20to+80C,60mm,17P,1.25mm	
JCN5A	3809-001157	CABLE-FLAT;30V,-20to+80C,60mm,35P,1.25mm	
UT01	AH59-10141E	REMOCON-ASS'Y;-,-,-,-,DVD-C700,-	

7-2 Deck Assembly



Loc. No	Parts No.	Description ; Specification	Remark
900	6003-000198	SCREW-TAPTITE;PWH,+,B,M3,L12,ZPC(YEL),SW	
901	6003-000101	SCREW-TAPTITE;-,-,B,M3,L10,ZPC(YEL),SWRC	
902	6003-000156	SCREW-TAPTITE;PH,+,B,M2,L4,CBLACK,SWRCH1	
903	AH60-10014A	SCREW;PH,+,-,M2,L3,YEL,-,	
904	6001-001258	SCREW-MACHINE;BH,+,M1.7,L4,ZPC(BLK),SWRC	
905	AH60-10143U	SCREW-TAP TITE;-,SWRCH18A,-,PH,-,DP-3,+,	
908	6003-000108	SCREW-TAPTITE;BH,+,B,M2.6,L6,ZPC(YEL),SW	
909	BG60-10020A	SCREW-SP MOTOR;-,BHW TOOTH,-,-,M1.7,L3,-	
CN1A	3809-001158	CABLE-FLAT;30V,-20to+80C,50mm,11P,1mm,UL	
CN5A	3809-001156	CABLE-FLAT;30V,-20to+80C,420mm,36P,1.25m	
H200	AH97-00307A	ASSY-PU DECK;DP-4,-,-	
H201	AH61-00289A	CHASSIS-SUB;-,ABS+GF 20%,-,-,-,-,-,-,D	
H210	AH30-00004A	PICK UP-ASSY;DP-4	
H211	AH30-00005A	PICK UP-ASSY CHANGER;12pF√fl∞°(PCB)	
H212	AH66-00093A	RACK-SLIDE;-,M90-44(DURACON),-,-,-,-,DV-	
H220	AH31-00014A	MOTOR-SPINDLE ASSY;-,-,-,-	
H230	AH41-00140A	PCB-DECK ASSY;PV-32,-,-,-,-,108*78*1.6T,	
H240	AH61-00335A	BRACKET-DECK ASSY;-,DP-4,-,-,-,-,-	
H241	AH66-00090A	GEAR-FEED(U);-,-,-,-,-,-,DP-4,WHT,-,-	
H242	AC60-30306A	WASHER-SLIT;-,-,ID2.1,OD5.0,T0.5,-,POLYS	
H243	AH61-00290A	SHAFT-PU;-,SUS420J2,-,-,-,-,DP-4	
H244	AH61-00291A	DAMPER;-,BUTYL 45µµ,-,-,-,-,DP-4,-,-,	
H300	AH97-00244A	ASSY-BASE MAIN;DP-4,-,-	
H400	AH61-00332A	FRAME-MAIN ASSY;-,ABS+SECC+POM,-,-,-,-,-	
H410	AH61-00120A	FRAME-MAIN;-,ABS,-,2,347,357,80,BLK,-,DP	
H411	AH66-00105A	PULLEY-MOTOR ASSY;-,POM,-,DP-4,-	
H412	AH66-00085A	GEAR-LOAD;-,-,-,-,-,-,DP-4,BLK,-,-	
H413	AH66-00084A	GEAR-PULLEY;-,-,-,-,-,-,DP-4,WHT,-,-	
H414	AH66-00035A	GEAR-CAM;-,POM,M1,86,80,-,-,DP-4	
H415	AH66-00037A	GEAR-TRAY;-,POM,M1,86,80,-,-,DP-4	
H416	AH66-00038A	GEAR-CONVERT;-,POM,M1,M1.52,22,28,-,-,DP	
H417	AH66-00086A	GEAR-SINCRO;-,-,-,-,-,-,-,DP-4,WHT,-,-	
H418	AH66-00041A	LEVER-LOCKER;-,POM,-,-,-,DP-4	
H419	AH61-00125A	SPRING-LOCKER;-,-,SUS304-WPB,-,0.4,-,DP-	
H420	AH66-00087A	SLIDER-CAM;-,ABS,-,-,-,DP-4	
H421	AH66-00088A	BELT-LOAD;-,RUBBER,T=1,-,-,BLK,DP-4	
H430	AH66-00104A	CLAMPER-ASSY;-,POM+MAGNET,-,-,-,DP-4	
H431	AH61-00283A	PLATE-CHUCK;-,DURACON M90-44,-,-,DP-4	
H432	AH33-00006A	MAGENT;-,-,-,-,-,-,-	
H433	AH66-00089A	CLAMPER;-,M90-44(DURACON),-,-,-,DV-P32	
H440	AH41-00130A	PCB-PULLEY MOTOR ASSY;DP-4,-,-,-,-,37*18	
H450	AH41-00135A	PCB-S/W ASSY;DP-4,-,-,-,-,34*22*1.6T,-,-	
H500	AH97-00243A	ASSY-TRAY DISC;DP-4,-,-	
H510	AH66-00106A	TRAY-DISC SUB ASSY;-,ABS+SECC+SUS,-,BLK,	
H511	AH66-00034A	TRAY-DISC;-,ABS,-,BLK,-,DP-4	
H512	AH97-00237A	ASSY-ROLLER;DP-4,-,-	
H513	AH61-50324A	SHAFT-ROLLER;STS,PI1.5,RCD-C1	
H514	AH66-00036A	TRAY-ROULETTE;-,ABS,-,BLK,-,DP-4	
H520	AH61-00333A	BRACKET-WORM ASSY;-,SECC+SUM,-,-,-,-,DP-	
H521	AH61-00360A	BRACKET-ASSY;-,SECC+SUM,-,-,-,-,DP-4,-	
H522	AH97-00238A	ASSY-WORM MOTOR;DP-4,-,-	
H523	AH61-00334A	SHAFT-WORM ASSY;-,SUS+POM,-,-,-,-,DP-4	
H525	AH66-00040A	GEAR-ROULETTE;-,POM,M0.5,60,-,-,DP-4	
H526	6031-001159	WASHER-PLAIN;POLYSLIDE,-,ID3.6,OD8,T0.4,	
H527	AH66-00042A	BELT-WORM;-,CR,-,10%,-,BLK,DP-4	
H530	AH41-00129A	PCB-SENSOR ASSY;DP-4,-,-,-,-,34*22*1.6T,	
LCN01A	3809-001152	CABLE-FLAT;30V,-20to+80C,200mm,6P,1.25mm	
TCN03A	3809-001153	CABLE-FLAT;30V,-20to+80C,330mm,11P,1.25m	

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8. Electrical Parts List

Loc.No	Part No	Description ; Specification	Remark
601		**ASSY PCB-MAIN;DVD-C600/XAA,MAIN PCB**	
AC10	2203-000444	C-CERAMIC,CHIP;1nF,10%,50V,X7R,TP,2012,-	
AC11	2202-000806	C-CERAMIC,MLC-AXIAL;220pF,10%,50V,Y5P,TP	
AC12	2203-000595	C-CERAMIC,CHIP;0.22nF,5%,50V,NP0,TP,2012	
AC4	2203-000444	C-CERAMIC,CHIP;1nF,10%,50V,X7R,TP,2012,-	
AC5	2203-000595	C-CERAMIC,CHIP;0.22nF,5%,50V,NP0,TP,2012	
AC56	2203-000192	C-CERAMIC,CHIP;100nF,+80-20%,50V,Y5V,TP,	
AC57	2203-000192	C-CERAMIC,CHIP;100nF,+80-20%,50V,Y5V,TP,	
AC58	2202-002037	C-CERAMIC,MLC-AXIAL;100nF,80-20%,50V,Y5V	
AC59	2202-002037	C-CERAMIC,MLC-AXIAL;100nF,80-20%,50V,Y5V	
AC6	2203-000595	C-CERAMIC,CHIP;0.22nF,5%,50V,NP0,TP,2012	
AC61	2203-001388	C-CERAMIC,CHIP;10nF,5%,50V,X7R,TP,2012	
AC62	2203-000260	C-CERAMIC,CHIP;10nF,10%,50V,X7R,TP,2012	
AC7	2203-000192	C-CERAMIC,CHIP;100nF,+80-20%,50V,Y5V,TP,	
AC71	2203-000192	C-CERAMIC,CHIP;100nF,+80-20%,50V,Y5V,TP,	
AC73	2301-000161	C-FILM,PEF;12nF,5%,50V,TP,6.5X5.5X3.0X5,	
AC74	2301-000161	C-FILM,PEF;12nF,5%,50V,TP,6.5X5.5X3.0X5,	
AC8	2203-000192	C-CERAMIC,CHIP;100nF,+80-20%,50V,Y5V,TP,	
AD1	0407-000114	DIODE-ARRAY;DAN202K,80V,100mA,CA2-3,SOT-	
AD2	0407-000114	DIODE-ARRAY;DAN202K,80V,100mA,CA2-3,SOT-	
AD4	0401-000101	DIODE-SWITCHING;1N4148,100V,200mA,DO-35,	
AD5	0401-000101	DIODE-SWITCHING;1N4148,100V,200mA,DO-35,	
AD6	0407-000114	DIODE-ARRAY;DAN202K,80V,100mA,CA2-3,SOT-	
AD7	0407-000114	DIODE-ARRAY;DAN202K,80V,100mA,CA2-3,SOT-	
AE10	2401-002144	C-AL;47uF,20%,16V,GP,TP,5x11,5	
AE11	2401-002144	C-AL;47uF,20%,16V,GP,TP,5x11,5	
AE30	2401-000302	C-AL;100uF,20%,25V,GP,TP,6.3x11,5	
AE31	2401-000037	C-AL;470uF,20%,16V,GP,TP,8x11.5,5	
AE33	2401-002144	C-AL;47uF,20%,16V,GP,TP,5x11,5	
AE4	2401-002068	C-AL;33uF,20%,16V,GP,TP,5x11,5	
AE41	2401-000302	C-AL;100uF,20%,25V,GP,TP,6.3x11,5	
AE5	2401-002068	C-AL;33uF,20%,16V,GP,TP,5x11,5	
AE6	2401-000913	C-AL;22uF,20%,16V,GP,TP,5x11mm,2.5m	
AE7	2401-002068	C-AL;33uF,20%,16V,GP,TP,5x11,5	
AE8	2401-002068	C-AL;33uF,20%,16V,GP,TP,5x11,5	
AE9	2401-000913	C-AL;22uF,20%,16V,GP,TP,5x11mm,2.5m	
AIC5	AH14-10004R	IC;M74HCU04,SOP,TAPE 14P	
AL19	2901-001125	FILTER-EMI ON BOARD;50V,0.5A,-,220pF,7x7	
AL20	2901-001125	FILTER-EMI ON BOARD;50V,0.5A,-,220pF,7x7	
AL21	2701-000113	INDUCTOR-AXIAL;100uH,5%,2.5x3.4mm	
AL22	2701-000113	INDUCTOR-AXIAL;100uH,5%,2.5x3.4mm	
AL5	3301-000297	CORE-FERRITE BEAD;AA,3.6x1.2x5.7mm,1400,	
AL6	2701-000113	INDUCTOR-AXIAL;100uH,5%,2.5x3.4mm	
AOP1	1201-000163	IC-OP AMP;4560,SOP,8P,173MIL,DUAL,100V/m	
AOP5	1201-000163	IC-OP AMP;4560,SOP,8P,173MIL,DUAL,100V/m	
AQ1	0501-000341	TR-SMALL SIGNAL;KSC1623-L,NPN,200mW,SOT-	
AQ17	0504-000118	TR-DIGITAL;KSR1003,NPN,300MW,22K/22K,TO-	
AQ18	0504-000118	TR-DIGITAL;KSR1003,NPN,300MW,22K/22K,TO-	
AQ19	0504-001003	TR-DIGITAL;KSR2003,PNP,300MW,22K/22K,TO-	
AQ2	0501-000341	TR-SMALL SIGNAL;KSC1623-L,NPN,200mW,SOT-	
AQ20	0504-000156	TR-DIGITAL;DTA124EKA,PNP,200mW,22K-22K	
AQ21	0504-000128	TR-DIGITAL;-,NPN,200MW,22K/22K,SOT-23,TP	
AQ22	0504-000156	TR-DIGITAL;DTA124EKA,PNP,200mW,22K-22K	
AQ3	0501-000341	TR-SMALL SIGNAL;KSC1623-L,NPN,200mW,SOT-	
AQ33	0504-000128	TR-DIGITAL;-,NPN,200MW,22K/22K,SOT-23,TP	
AQ34	0504-000128	TR-DIGITAL;-,NPN,200MW,22K/22K,SOT-23,TP	
AQ35	0504-000156	TR-DIGITAL;DTA124EKA,PNP,200mW,22K-22K	
AQ4	0501-000341	TR-SMALL SIGNAL;KSC1623-L,NPN,200mW,SOT-	
AR10	2001-000878	R-CARBON;6.2KOHM,5%,1/8W,AA,TP,1.8X3.2M	
AR11	2001-000878	R-CARBON;6.2KOHM,5%,1/8W,AA,TP,1.8X3.2M	
AR119	2007-000766	R-CHIP;330OHM,5%,1/10W,DA,TP,2012	
AR12	2007-001055	R-CHIP;6.2KOHM,5%,1/10W,DA,TP,2012	
AR121	2007-001247	R-CHIP;910HM,5%,1/10W,DA,TP,2012	
AR13	2007-001055	R-CHIP;6.2KOHM,5%,1/10W,DA,TP,2012	
AR14	2007-001055	R-CHIP;6.2KOHM,5%,1/10W,DA,TP,2012	
AR15	2001-000290	R-CARBON;10KOHM,5%,1/8W,AA,TP,1.8X3.2MM	
AR150	2001-000429	R-CARBON;1KOHM,5%,1/8W,AA,TP,1.8X3.2MM	
AR151	2001-000429	R-CARBON;1KOHM,5%,1/8W,AA,TP,1.8X3.2MM	
AR157	2007-000468	R-CHIP;1KOHM,5%,1/10W,DA,TP,2012	
AR158	2007-000468	R-CHIP;1KOHM,5%,1/10W,DA,TP,2012	
AR18	2001-000429	R-CARBON;1KOHM,5%,1/8W,AA,TP,1.8X3.2MM	
AR19	2001-000429	R-CARBON;1KOHM,5%,1/8W,AA,TP,1.8X3.2MM	
AR20	2001-000003	R-CARBON;330ohm,5%,1/8W,AA,TP,1.8x3.2mm	
AR21	2001-000878	R-CARBON;6.2KOHM,5%,1/8W,AA,TP,1.8X3.2M	
AR22	2001-000878	R-CARBON;6.2KOHM,5%,1/8W,AA,TP,1.8X3.2M	
AR23	2001-000878	R-CARBON;6.2KOHM,5%,1/8W,AA,TP,1.8X3.2M	
AR24	2007-001055	R-CHIP;6.2KOHM,5%,1/10W,DA,TP,2012	
AR25	2007-001055	R-CHIP;6.2KOHM,5%,1/10W,DA,TP,2012	
AR26	2007-001055	R-CHIP;6.2KOHM,5%,1/10W,DA,TP,2012	
AR27	2007-000300	R-CHIP;10KOHM,5%,1/10W,DA,TP,2012	
AR28	2001-000003	R-CARBON;330ohm,5%,1/8W,AA,TP,1.8x3.2mm	
AR29	2001-000281	R-CARBON;100OHM,5%,1/8W,AA,TP,1.8X3.2MM	
AR30	2001-000429	R-CARBON;1KOHM,5%,1/8W,AA,TP,1.8X3.2MM	
AR31	2001-000429	R-CARBON;1KOHM,5%,1/8W,AA,TP,1.8X3.2MM	
AR32	2007-000766	R-CHIP;330OHM,5%,1/10W,DA,TP,2012	
AR41	2001-000003	R-CARBON;330ohm,5%,1/8W,AA,TP,1.8x3.2mm	
AR42	2001-000281	R-CARBON;100OHM,5%,1/8W,AA,TP,1.8X3.2MM	
AR9	2001-000878	R-CARBON;6.2KOHM,5%,1/8W,AA,TP,1.8X3.2M	
AR90	2001-000241	R-CARBON;1.5KOHM,5%,1/8W,AA,TP,1.8X3.2M	
AR91	2001-000281	R-CARBON;100OHM,5%,1/8W,AA,TP,1.8X3.2MM	
AR92	2001-000780	R-CARBON;470OHM,5%,1/8W,AA,TP,1.8X3.2MM	
AVJ1	3722-001355	JACK-RCA;3P(4P),3.2MM,NI,GRN/RED/BLU,-	
AVJ2	3722-001353	JACK-RCA;6P,3.2MM,NI,YEL/WHT/RED,-	
AVJ4	3722-001053	JACK-RCA;1P,3.2mm,NI,BLK,-	
AVJ5	3707-001005	CONNECTOR-OPTICAL;PLUG,SM,-,4.4/2.0MM	
AZD1	0403-000551	DIODE-ZENER;MTZ3.9B,3.9V,3.89-4.16V,500m	
AZD2	0403-001211	DIODE-ZENER;MTZJ12B,11.44-12.03V,500MW,D	
AZD3	0403-001211	DIODE-ZENER;MTZJ12B,11.44-12.03V,500MW,D	
AZD4	0403-001211	DIODE-ZENER;MTZJ12B,11.44-12.03V,500MW,D	
AZD5	0403-001211	DIODE-ZENER;MTZJ12B,11.44-12.03V,500MW,D	
AZD6	0403-001211	DIODE-ZENER;MTZJ12B,11.44-12.03V,500MW,D	
AZD7	0403-001211	DIODE-ZENER;MTZJ12B,11.44-12.03V,500MW,D	
HC01	2401-002299	C-AL;4.7uF,20%,50V,GP,TP,5x7,5	
HC02	2401-002299	C-AL;4.7uF,20%,50V,GP,TP,5x7,5	
HR03	2001-000273	R-CARBON;100KOHM,5%,1/8W,AA,TP,1.8X3.2M	
HR04	2001-000273	R-CARBON;100KOHM,5%,1/8W,AA,TP,1.8X3.2M	
JCN01	AH39-00136A	LEAD CONNECTOR-ASSY;-,-,-,-,-,-,-,-,5100	
JCN02	3711-001061	CONNECTOR-HEADER;BOX,6P,1R,2mm,ANGLE,SN	
JCN04	AH39-00135A	LEAD CONNECTOR-ASSY;-,-,-,-,-,-,-,-,5100	
JCN3	3708-000189	CONNECTOR-FPC/FC/PIC;17P,1.25mm,ANGLE,SN	
JCN5	3708-000277	CONNECTOR-FPC/FC/PIC;35P,1.25mm,ANGLE,SN	
JP71	2001-000429	R-CARBON;1KOHM,5%,1/8W,AA,TP,1.8X3.2MM	
SVJ1	3722-001375	JACK-DIN;4P,-,NI,BLK,-	
VC101	2203-000858	C-CERAMIC,CHIP;0.039nF,5%,50V,NP0,TP,201	
VC105	2007-000029	R-CHIP;0OHM,5%,1/10W,DA,TP,2012	
VC106	2203-000192	C-CERAMIC,CHIP;100nF,+80-20%,50V,Y5V,TP,	
VC106A	2007-000029	R-CHIP;0OHM,5%,1/10W,DA,TP,2012	
VC2	2202-002037	C-CERAMIC,MLC-AXIAL;100nF,80-20%,50V,Y5V	
VC3	2202-002037	C-CERAMIC,MLC-AXIAL;100nF,80-20%,50V,Y5V	
VE51	2401-002042	C-AL;220uF,20%,10V,GP,TP,6.3x11,5	
VE54	2401-000369	C-AL;100UF,20%,6.3V,GP,-,6.3X11,5	
VE55	2401-000913	C-AL;22uF,20%,16V,GP,TP,5x11mm,2.5m	

Loc.No	Part No	Description ; Specification	Remark
VE58	2401-000369	C-AL;100UF,20%,6.3V,GP,-,6.3X11,5	
VE58A	2401-000913	C-AL;22uF,20%,16V,GP,TP,5x11mm,2.5m	
VE60	2401-001353	C-AL;470uF,20%,10V,GP,TP,8x11.5,5	
VE61	2401-000913	C-AL;22uF,20%,16V,GP,TP,5x11mm,2.5m	
VE66	2401-001353	C-AL;470uF,20%,10V,GP,TP,8x11.5,5	
VE67	2401-000913	C-AL;22uF,20%,16V,GP,TP,5x11mm,2.5m	
VIC51	1201-001419	IC-VIDEO AMP;7660,SSOP,16P,173MIL,3,6DB,	
VIC52	1201-001419	IC-VIDEO AMP;7660,SSOP,16P,173MIL,3,6DB,	
VL101	2701-000160	INDUCTOR-AXIAL;22uH,5%,2.4x3.4mm	
VL102	2701-000160	INDUCTOR-AXIAL;22uH,5%,2.4x3.4mm	
VL113	2701-000138	INDUCTOR-AXIAL;18uH,5%,2.5x3.4mm	
VL115	2701-000002	INDUCTOR-AXIAL;100uH,10%,4.2x9.8mm	
VL116	2701-000002	INDUCTOR-AXIAL;100uH,10%,4.2x9.8mm	
VR10	2001-000008	R-CARBON;15KOHM,5%,1/8W,AA,TP,1.8X3.2MM	
VR108	2001-000969	R-CARBON;75OHM,5%,1/8W,AA,TP,1.8X3.2MM	
VR11	2001-000008	R-CARBON;15KOHM,5%,1/8W,AA,TP,1.8X3.2MM	
VR117	2001-000969	R-CARBON;75OHM,5%,1/8W,AA,TP,1.8X3.2MM	
VR12	2001-000591	R-CARBON;3.3KOHM,5%,1/8W,AA,TP,1.8X3.2M	
VR121	2001-000515	R-CARBON;220OHM,5%,1/8W,AA,TP,1.8X3.2MM	
VR122	2001-000515	R-CARBON;220OHM,5%,1/8W,AA,TP,1.8X3.2MM	
VR123	2001-000290	R-CARBON;10KOHM,5%,1/8W,AA,TP,1.8X3.2MM	
VR125	2001-000290	R-CARBON;10KOHM,5%,1/8W,AA,TP,1.8X3.2MM	
VR13	2001-000591	R-CARBON;3.3KOHM,5%,1/8W,AA,TP,1.8X3.2M	
VR130	2001-000969	R-CARBON;75OHM,5%,1/8W,AA,TP,1.8X3.2MM	
VR131	2001-000780	R-CARBON;470OHM,5%,1/8W,AA,TP,1.8X3.2MM	
VR132	2001-000003	R-CARBON;330ohm,5%,1/8W,AA,TP,1.8x3.2mm	
VR133	2001-000554	R-CARBON;270OHM,5%,1/8W,AA,TP,1.8X3.2MM	
VR14	2001-000591	R-CARBON;3.3KOHM,5%,1/8W,AA,TP,1.8X3.2M	
VR146	2001-000969	R-CARBON;75OHM,5%,1/8W,AA,TP,1.8X3.2MM	
VR175	2001-000969	R-CARBON;75OHM,5%,1/8W,AA,TP,1.8X3.2MM	
VR176	2001-000281	R-CARBON;100OHM,5%,1/8W,AA,TP,1.8X3.2MM	
VR177	2001-000003	R-CARBON;330ohm,5%,1/8W,AA,TP,1.8x3.2mm	
VR178	2001-000515	R-CARBON;220OHM,5%,1/8W,AA,TP,1.8X3.2MM	
VR192	2001-000969	R-CARBON;75OHM,5%,1/8W,AA,TP,1.8X3.2MM	
VR193	2001-000969	R-CARBON;75OHM,5%,1/8W,AA,TP,1.8X3.2MM	
VR3	2001-000591	R-CARBON;3.3KOHM,5%,1/8W,AA,TP,1.8X3.2M	
VR4	2001-000591	R-CARBON;3.3KOHM,5%,1/8W,AA,TP,1.8X3.2M	
VR5	2001-000591	R-CARBON;3.3KOHM,5%,1/8W,AA,TP,1.8X3.2M	
VR7	2001-000008	R-CARBON;15KOHM,5%,1/8W,AA,TP,1.8X3.2MM	
VR8	2001-000008	R-CARBON;15KOHM,5%,1/8W,AA,TP,1.8X3.2MM	
VR9	2001-000008	R-CARBON;15KOHM,5%,1/8W,AA,TP,1.8X3.2MM	
VZD1	0403-001211	DIODE-ZENER;MTZJ12B,11.44-12.03V,500MW,D	
VZD10	0403-001211	DIODE-ZENER;MTZJ12B,11.44-12.03V,500MW,D	
VZD11	0403-001211	DIODE-ZENER;MTZJ12B,11.44-12.03V,500MW,D	
VZD12	0403-001211	DIODE-ZENER;MTZJ12B,11.44-12.03V,500MW,D	
VZD13	0403-001211	DIODE-ZENER;MTZJ12B,11.44-12.03V,500MW,D	
VZD14	0403-001211	DIODE-ZENER;MTZJ12B,11.44-12.03V,500MW,D	
VZD2	0403-001211	DIODE-ZENER;MTZJ12B,11.44-12.03V,500MW,D	
VZD3	0403-001211	DIODE-ZENER;MTZJ12B,11.44-12.03V,500MW,D	
VZD4	0403-001211	DIODE-ZENER;MTZJ12B,11.44-12.03V,500MW,D	
VZD5	0403-001211	DIODE-ZENER;MTZJ12B,11.44-12.03V,500MW,D	
VZD6	0403-001211	DIODE-ZENER;MTZJ12B,11.44-12.03V,500MW,D	
VZD7	0403-001211	DIODE-ZENER;MTZJ12B,11.44-12.03V,500MW,D	
VZD8	0403-001211	DIODE-ZENER;MTZJ12B,11.44-12.03V,500MW,D	
VZD9	0403-001211	DIODE-ZENER;MTZJ12B,11.44-12.03V,500MW,D	
602		**ASSY-PCB-JACK;RC5910P,JACK PCB**	
AC10	2203-000444	C-CERAMIC,CHIP;1nF,10%,50V,X7R,TP,2012,-	
AC11	2202-000806	C-CERAMIC,MLC-AXIAL;220pF,10%,50V,Y5P,TP	
AC12	2203-000595	C-CERAMIC,CHIP;0.22nF,5%,50V,NP0,TP,2012	
AC4	2203-000444	C-CERAMIC,CHIP;1nF,10%,50V,X7R,TP,2012,-	
AC5	2203-000595	C-CERAMIC,CHIP;0.22nF,5%,50V,NP0,TP,2012	
AC56	2203-000192	C-CERAMIC,CHIP;100nF,+80-20%,50V,Y5V,TP,	
AC57	2203-000192	C-CERAMIC,CHIP;100nF,+80-20%,50V,Y5V,TP,	
AC58	2202-002037	C-CERAMIC,MLC-AXIAL;100nF,80-20%,50V,Y5V	
AC59	2202-002037	C-CERAMIC,MLC-AXIAL;100nF,80-20%,50V,Y5V	

Loc.No	Part No	Description ; Specification	Remark
AC6	2203-000595	C-CERAMIC,CHIP;0.22nF,5%,50V,NP0,TP,2012	
AC61	2203-001388	C-CERAMIC,CHIP;10nF,5%,50V,X7R,TP,2012	
AC62	2203-000260	C-CERAMIC,CHIP;10nF,10%,50V,X7R,TP,2012	
AC7	2203-000192	C-CERAMIC,CHIP;100nF,+80-20%,50V,Y5V,TP,	
AC71	2203-000192	C-CERAMIC,CHIP;100nF,+80-20%,50V,Y5V,TP,	
AC73	2301-000161	C-FILM,PEF;12nF,5%,50V,TP,6.5X5.5X3.0X5,	
AC74	2301-000161	C-FILM,PEF;12nF,5%,50V,TP,6.5X5.5X3.0X5,	
AC8	2203-000192	C-CERAMIC,CHIP;100nF,+80-20%,50V,Y5V,TP,	
AD1	0407-000114	DIODE-ARRAY;DAN202K,80V,100mA,CA2-3,SOT-	
AD2	0407-000114	DIODE-ARRAY;DAN202K,80V,100mA,CA2-3,SOT-	
AD4	0401-000101	DIODE-SWITCHING;1N4148,100V,200mA,DO-35,	
AD5	0401-000101	DIODE-SWITCHING;1N4148,100V,200mA,DO-35,	
AD6	0407-000114	DIODE-ARRAY;DAN202K,80V,100mA,CA2-3,SOT-	
AD7	0407-000114	DIODE-ARRAY;DAN202K,80V,100mA,CA2-3,SOT-	
AE10	2401-002144	C-AL;47uF,20%,16V,GP,TP,5x11,5	
AE11	2401-002144	C-AL;47uF,20%,16V,GP,TP,5x11,5	
AE30	2401-000302	C-AL;100uF,20%,25V,GP,TP,6.3x11,5	
AE31	2401-000037	C-AL;470uF,20%,16V,GP,TP,8x11.5,5	
AE33	2401-002144	C-AL;47uF,20%,16V,GP,TP,5x11,5	
AE4	2401-002068	C-AL;33uF,20%,16V,GP,TP,5x11,5	
AE41	2401-000302	C-AL;100uF,20%,25V,GP,TP,6.3x11,5	
AE5	2401-002068	C-AL;33uF,20%,16V,GP,TP,5x11,5	
AE6	2401-000913	C-AL;22uF,20%,16V,GP,TP,5x11mm,2.5m	
AE7	2401-002068	C-AL;33uF,20%,16V,GP,TP,5x11,5	
AE8	2401-002068	C-AL;33uF,20%,16V,GP,TP,5x11,5	
AE9	2401-000913	C-AL;22uF,20%,16V,GP,TP,5x11mm,2.5m	
AIC5	AH14-10004R	IC;M74HCU04,SOP,TAPE 14P	
AL19	2901-001125	FILTER-EMI ON BOARD;50V,0.5A,-,220pF,7x7	
AL20	2901-001125	FILTER-EMI ON BOARD;50V,0.5A,-,220pF,7x7	
AL21	2701-000113	INDUCTOR-AXIAL;100uH,5%,2.5x3.4mm	
AL22	2701-000113	INDUCTOR-AXIAL;100uH,5%,2.5x3.4mm	
AL5	3301-000297	CORE-FERRITE BEAD;AA,3.6x1.2x5.7mm,1400,	
AL6	2701-000113	INDUCTOR-AXIAL;100uH,5%,2.5x3.4mm	
AOP1	1201-000163	IC-OP AMP;4560,SOP,8P,173MIL,DUAL,100V/m	
AOP5	1201-000163	IC-OP AMP;4560,SOP,8P,173MIL,DUAL,100V/m	
AQ1	0501-000341	TR-SMALL SIGNAL;KSC1623-L,NPN,200mW,SOT-	
AQ17	0504-000118	TR-DIGITAL;KSR1003,NPN,300MW,22K/22K,TO-	
AQ18	0504-000118	TR-DIGITAL;KSR1003,NPN,300MW,22K/22K,TO-	
AQ19	0504-001003	TR-DIGITAL;KSR2003,PNP,300MW,22K/22K,TO-	
AQ2	0501-000341	TR-SMALL SIGNAL;KSC1623-L,NPN,200mW,SOT-	
AQ20	0504-000156	TR-DIGITAL;DTA124EKA,PNP,200mW,22K-22K	
AQ21	0504-000128	TR-DIGITAL;-,NPN,200MW,22K/22K,SOT-23,TP	
AQ22	0504-000156	TR-DIGITAL;DTA124EKA,PNP,200mW,22K-22K	
AQ3	0501-000341	TR-SMALL SIGNAL;KSC1623-L,NPN,200mW,SOT-	
AQ33	0504-000128	TR-DIGITAL;-,NPN,200MW,22K/22K,SOT-23,TP	
AQ34	0504-000128	TR-DIGITAL;-,NPN,200MW,22K/22K,SOT-23,TP	
AQ35	0504-000156	TR-DIGITAL;DTA124EKA,PNP,200mW,22K-22K	
AQ4	0501-000341	TR-SMALL SIGNAL;KSC1623-L,NPN,200mW,SOT-	
AR10	2001-000878	R-CARBON;6.2KOHM,5%,1/8W,AA,TP,1.8X3.2M	
AR11	2001-000878	R-CARBON;6.2KOHM,5%,1/8W,AA,TP,1.8X3.2M	
AR119	2007-000766	R-CHIP;330OHM,5%,1/10W,DA,TP,2012	
AR12	2007-001055	R-CHIP;6.2KOHM,5%,1/10W,DA,TP,2012	
AR121	2007-001247	R-CHIP;91OHM,5%,1/10W,DA,TP,2012	
AR13	2007-001055	R-CHIP;6.2KOHM,5%,1/10W,DA,TP,2012	
AR14	2007-001055	R-CHIP;6.2KOHM,5%,1/10W,DA,TP,2012	
AR15	2001-000290	R-CARBON;10KOHM,5%,1/8W,AA,TP,1.8X3.2MM	
AR150	2001-000429	R-CARBON;1KOHM,5%,1/8W,AA,TP,1.8X3.2MM	
AR151	2001-000429	R-CARBON;1KOHM,5%,1/8W,AA,TP,1.8X3.2MM	
AR157	2007-000468	R-CHIP;1KOHM,5%,1/10W,DA,TP,2012	
AR158	2007-000468	R-CHIP;1KOHM,5%,1/10W,DA,TP,2012	
AR18	2001-000429	R-CARBON;1KOHM,5%,1/8W,AA,TP,1.8X3.2MM	
AR19	2001-000429	R-CARBON;1KOHM,5%,1/8W,AA,TP,1.8X3.2MM	
AR20	2001-000003	R-CARBON;330ohm,5%,1/8W,AA,TP,1.8x3.2mm	
AR21	2001-000878	R-CARBON;6.2KOHM,5%,1/8W,AA,TP,1.8X3.2M	
AR22	2001-000878	R-CARBON;6.2KOHM,5%,1/8W,AA,TP,1.8X3.2M	
AR23	2001-000878	R-CARBON;6.2KOHM,5%,1/8W,AA,TP,1.8X3.2M	

Loc.No	Part No	Description ; Specification	Remark
AR24	2007-001055	R-CHIP;6.2KOHM,5%,1/10W,DA,TP,2012	
AR25	2007-001055	R-CHIP;6.2KOHM,5%,1/10W,DA,TP,2012	
AR26	2007-001055	R-CHIP;6.2KOHM,5%,1/10W,DA,TP,2012	
AR27	2007-000300	R-CHIP;10KOHM,5%,1/10W,DA,TP,2012	
AR28	2001-000003	R-CARBON;330ohm,5%,1/8W,AA,TP,1.8x3.2mm	
AR29	2001-000281	R-CARBON;100OHM,5%,1/8W,AA,TP,1.8X3.2MM	
AR30	2001-000429	R-CARBON;1KOHM,5%,1/8W,AA,TP,1.8X3.2MM	
AR31	2001-000429	R-CARBON;1KOHM,5%,1/8W,AA,TP,1.8X3.2MM	
AR32	2007-000766	R-CHIP;330OHM,5%,1/10W,DA,TP,2012	
AR41	2001-000003	R-CARBON;330ohm,5%,1/8W,AA,TP,1.8x3.2mm	
AR42	2001-000281	R-CARBON;100OHM,5%,1/8W,AA,TP,1.8X3.2MM	
AR9	2001-000878	R-CARBON;6.2KOHM,5%,1/8W,AA,TP,1.8X3.2M	
AR90	2001-000241	R-CARBON;1.5KOHM,5%,1/8W,AA,TP,1.8X3.2M	
AR91	2001-000281	R-CARBON;100OHM,5%,1/8W,AA,TP,1.8X3.2MM	
AR92	2001-000780	R-CARBON;470OHM,5%,1/8W,AA,TP,1.8X3.2MM	
AVJ1	3722-001355	JACK-RCA;3P(4P),3.2MM,NI,GRN/RED/BLU,-	
AVJ2	3722-001353	JACK-RCA;6P,3.2MM,NI,YEL/WHT/RED,-	
AVJ4	3722-001053	JACK-RCA;1P,3.2mm,NI,BLK,-	
AVJ5	3707-001005	CONNECTOR-OPTICAL;PLUG,SM,-,4.4/2.0MM	
AZD1	0403-000551	DIODE-ZENER;MTZ3.9B,3.9V,3.89-4.16V,500m	
AZD2	0403-001211	DIODE-ZENER;MTZJ12B,11.44-12.03V,500MW,D	
AZD3	0403-001211	DIODE-ZENER;MTZJ12B,11.44-12.03V,500MW,D	
AZD4	0403-001211	DIODE-ZENER;MTZJ12B,11.44-12.03V,500MW,D	
AZD5	0403-001211	DIODE-ZENER;MTZJ12B,11.44-12.03V,500MW,D	
AZD6	0403-001211	DIODE-ZENER;MTZJ12B,11.44-12.03V,500MW,D	
AZD7	0403-001211	DIODE-ZENER;MTZJ12B,11.44-12.03V,500MW,D	
HC01	2401-002299	C-AL;4.7uF,20%,50V,GP,TP,5x7,5	
HC02	2401-002299	C-AL;4.7uF,20%,50V,GP,TP,5x7,5	
HR03	2001-000273	R-CARBON;100KOHM,5%,1/8W,AA,TP,1.8X3.2M	
HR04	2001-000273	R-CARBON;100KOHM,5%,1/8W,AA,TP,1.8X3.2M	
JCN01	AH39-00136A	LEAD CONNECTOR-ASSY;-,-,-,-,-,-,-,-,5100	
JCN02	3711-001061	CONNECTOR-HEADER;BOX,6P,1R,2mm,ANGLE,SN	
JCN04	AH39-00135A	LEAD CONNECTOR-ASSY;-,-,-,-,-,-,-,-,5100	
JCN3	3708-000189	CONNECTOR-FPC/FC/PIC;17P,1.25mm,ANGLE,SN	
JCN5	3708-000277	CONNECTOR-FPC/FC/PIC;35P,1.25mm,ANGLE,SN	
JP71	2001-000429	R-CARBON;1KOHM,5%,1/8W,AA,TP,1.8X3.2MM	
SVJ1	3722-001375	JACK-DIN;4P,-,NI,BLK,-	
VC101	2203-000858	C-CERAMIC,CHIP;0.039nF,5%,50V,NP0,TP,201	
VC105	2007-000029	R-CHIP;0OHM,5%,1/10W,DA,TP,2012	
VC106	2203-000192	C-CERAMIC,CHIP;100nF,+80-20%,50V,Y5V,TP,	
VC106A	2007-000029	R-CHIP;0OHM,5%,1/10W,DA,TP,2012	
VC2	2202-002037	C-CERAMIC,MLC-AXIAL;100nF,80-20%,50V,Y5V	
VC3	2202-002037	C-CERAMIC,MLC-AXIAL;100nF,80-20%,50V,Y5V	
VE51	2401-002042	C-AL;220uF,20%,10V,GP,TP,6.3x11,5	
VE54	2401-000369	C-AL;100UF,20%,6.3V,GP,-,6.3X11,5	
VE55	2401-000913	C-AL;22uF,20%,16V,GP,TP,5x11mm,2.5m	
VE58	2401-000369	C-AL;100UF,20%,6.3V,GP,-,6.3X11,5	
VE58A	2401-000913	C-AL;22uF,20%,16V,GP,TP,5x11mm,2.5m	
VE60	2401-001353	C-AL;470uF,20%,10V,GP,TP,8x11.5,5	
VE61	2401-000913	C-AL;22uF,20%,16V,GP,TP,5x11mm,2.5m	
VE66	2401-001353	C-AL;470uF,20%,10V,GP,TP,8x11.5,5	
VE67	2401-000913	C-AL;22uF,20%,16V,GP,TP,5x11mm,2.5m	
VIC51	1201-001419	IC-VIDEO AMP;7660,SSOP,16P,173MIL,3,6DB,	
VIC52	1201-001419	IC-VIDEO AMP;7660,SSOP,16P,173MIL,3,6DB,	
VL101	2701-000160	INDUCTOR-AXIAL;22uH,5%,2.4x3.4mm	
VL102	2701-000160	INDUCTOR-AXIAL;22uH,5%,2.4x3.4mm	
VL113	2701-000138	INDUCTOR-AXIAL;18uH,5%,2.5x3.4mm	
VL115	2701-000002	INDUCTOR-AXIAL;100uH,10%,4.2x9.8mm	
VL116	2701-000002	INDUCTOR-AXIAL;100uH,10%,4.2x9.8mm	
VR10	2001-000008	R-CARBON;15KOHM,5%,1/8W,AA,TP,1.8X3.2MM	
VR108	2001-000969	R-CARBON;75OHM,5%,1/8W,AA,TP,1.8X3.2MM	
VR11	2001-000008	R-CARBON;15KOHM,5%,1/8W,AA,TP,1.8X3.2MM	
VR117	2001-000969	R-CARBON;75OHM,5%,1/8W,AA,TP,1.8X3.2MM	
VR12	2001-000591	R-CARBON;3.3KOHM,5%,1/8W,AA,TP,1.8X3.2M	
VR121	2001-000515	R-CARBON;220OHM,5%,1/8W,AA,TP,1.8X3.2MM	
VR122	2001-000515	R-CARBON;220OHM,5%,1/8W,AA,TP,1.8X3.2MM	
VR123	2001-000290	R-CARBON;10KOHM,5%,1/8W,AA,TP,1.8X3.2MM	
VR125	2001-000290	R-CARBON;10KOHM,5%,1/8W,AA,TP,1.8X3.2MM	
VR13	2001-000591	R-CARBON;3.3KOHM,5%,1/8W,AA,TP,1.8X3.2M	
VR130	2001-000969	R-CARBON;75OHM,5%,1/8W,AA,TP,1.8X3.2MM	
VR131	2001-000780	R-CARBON;470OHM,5%,1/8W,AA,TP,1.8X3.2MM	
VR132	2001-000003	R-CARBON;330ohm,5%,1/8W,AA,TP,1.8x3.2mm	
VR133	2001-000554	R-CARBON;270OHM,5%,1/8W,AA,TP,1.8X3.2MM	
VR14	2001-000591	R-CARBON;3.3KOHM,5%,1/8W,AA,TP,1.8X3.2M	
VR146	2001-000969	R-CARBON;75OHM,5%,1/8W,AA,TP,1.8X3.2MM	
VR175	2001-000969	R-CARBON;75OHM,5%,1/8W,AA,TP,1.8X3.2MM	
VR176	2001-000281	R-CARBON;100OHM,5%,1/8W,AA,TP,1.8X3.2MM	
VR177	2001-000003	R-CARBON;330ohm,5%,1/8W,AA,TP,1.8x3.2mm	
VR178	2001-000515	R-CARBON;220OHM,5%,1/8W,AA,TP,1.8X3.2MM	
VR192	2001-000969	R-CARBON;75OHM,5%,1/8W,AA,TP,1.8X3.2MM	
VR193	2001-000969	R-CARBON;75OHM,5%,1/8W,AA,TP,1.8X3.2MM	
VR3	2001-000591	R-CARBON;3.3KOHM,5%,1/8W,AA,TP,1.8X3.2M	
VR4	2001-000591	R-CARBON;3.3KOHM,5%,1/8W,AA,TP,1.8X3.2M	
VR5	2001-000591	R-CARBON;3.3KOHM,5%,1/8W,AA,TP,1.8X3.2M	
VR7	2001-000008	R-CARBON;15KOHM,5%,1/8W,AA,TP,1.8X3.2MM	
VR8	2001-000008	R-CARBON;15KOHM,5%,1/8W,AA,TP,1.8X3.2MM	
VR9	2001-000008	R-CARBON;15KOHM,5%,1/8W,AA,TP,1.8X3.2MM	
VZD1	0403-001211	DIODE-ZENER;MTZJ12B,11.44-12.03V,500MW,D	
VZD10	0403-001211	DIODE-ZENER;MTZJ12B,11.44-12.03V,500MW,D	
VZD11	0403-001211	DIODE-ZENER;MTZJ12B,11.44-12.03V,500MW,D	
VZD12	0403-001211	DIODE-ZENER;MTZJ12B,11.44-12.03V,500MW,D	
VZD13	0403-001211	DIODE-ZENER;MTZJ12B,11.44-12.03V,500MW,D	
VZD14	0403-001211	DIODE-ZENER;MTZJ12B,11.44-12.03V,500MW,D	
VZD2	0403-001211	DIODE-ZENER;MTZJ12B,11.44-12.03V,500MW,D	
VZD3	0403-001211	DIODE-ZENER;MTZJ12B,11.44-12.03V,500MW,D	
VZD4	0403-001211	DIODE-ZENER;MTZJ12B,11.44-12.03V,500MW,D	
VZD5	0403-001211	DIODE-ZENER;MTZJ12B,11.44-12.03V,500MW,D	
VZD6	0403-001211	DIODE-ZENER;MTZJ12B,11.44-12.03V,500MW,D	
VZD7	0403-001211	DIODE-ZENER;MTZJ12B,11.44-12.03V,500MW,D	
VZD8	0403-001211	DIODE-ZENER;MTZJ12B,11.44-12.03V,500MW,D	
VZD9	0403-001211	DIODE-ZENER;MTZJ12B,11.44-12.03V,500MW,D	
603		**ASSY PCB-SMPS;RC5910P,SMPS PCB**	
PC01	2305-001021	C-FILM,MPEF;100nF,20%,275V,TP,17.5x7x13.	⚠
PC02	2305-001021	C-FILM,MPEF;100nF,20%,275V,TP,17.5x7x13.	⚠
PC04	2301-000140	C-FILM,PEF;10nF,10%,630V,BK,16.5X9.5X5.7	
PC05	2201-000129	C-CERAMIC,DISC;0.1nF,10%,1kV,Y5P,TP,7x4,	
PC07	2301-000129	C-FILM,PEF;100nF,5%,50V,TP,10X9X4.3X5,5m	
PC09	2301-000415	C-FILM,PEF;22nF,5%,50V,TP,6.5x10.5x4mm,5	
PC10	2201-000916	C-CERAMIC,DISC;100pF,10%,400V,Y5U,TP,10x	⚠
PC11	2201-000916	C-CERAMIC,DISC;100pF,10%,400V,Y5U,TP,10x	⚠
PC12	2202-002037	C-CERAMIC,MLC-AXIAL;100nF,80-20%,50V,Y5V	
PC13	2202-002037	C-CERAMIC,MLC-AXIAL;100nF,80-20%,50V,Y5V	
PC14	2202-002037	C-CERAMIC,MLC-AXIAL;100nF,80-20%,50V,Y5V	
PC15	2202-002037	C-CERAMIC,MLC-AXIAL;100nF,80-20%,50V,Y5V	
PC44	2301-000129	C-FILM,PEF;100nF,5%,50V,TP,10X9X4.3X5,5m	
PCN01	3711-000178	CONNECTOR-HEADER;1WALL,2P,1R,3.96mm,STRA	⚠
PCN02	3711-000632	CONNECTOR-HEADER;BOX,11P,1R,2mm,ANGLE,SN	
PCN03	AH39-00143A	LEAD CONNECTOR-ASSY;-,-,-,-,-,-,-,-,5264	
PD01	0402-001009	DIODE-RECTIFIER;1SR139,600V,1A,MSR,TP	⚠
PD02	0402-001009	DIODE-RECTIFIER;1SR139,600V,1A,MSR,TP	⚠
PD03	0402-001009	DIODE-RECTIFIER;1SR139,600V,1A,MSR,TP	⚠
PD04	0402-001009	DIODE-RECTIFIER;1SR139,600V,1A,MSR,TP	⚠
PD11	0402-000378	DIODE-RECTIFIER;EG01C,1000V,500mA,DO-41	
PD12	0402-001013	DIODE-RECTIFIER;1SR153-400,400V,800mA,DO	
PD3	0402-001013	DIODE-RECTIFIER;1SR153-400,400V,800mA,DO	
PD31	0402-001013	DIODE-RECTIFIER;1SR153-400,400V,800mA,DO	
PD32	0402-000430	DIODE-RECTIFIER;FML-G02S,200V,3.0A,TO-22	
PD33	0402-001251	DIODE-RECTIFIER;FMG-22R,200V,10A,TO-220F	
PD34	0402-001251	DIODE-RECTIFIER;FMG-22R,200V,10A,TO-220F	
PD35	0402-001013	DIODE-RECTIFIER;1SR153-400,400V,800mA,DO	
PD37	0402-000132	DIODE-RECTIFIER;1N4004,400V,1A,DO-41,TP	

Loc.No	Part No	Description ; Specification	Remark
PD38	0402-000132	DIODE-RECTIFIER;1N4004,400V,1A,DO-41,TP	
PE10	2401-001353	C-AL;470uF,20%,10V,GP,TP,8x11.5,5	
PE11	2401-000302	C-AL;100uF,20%,25V,GP,TP,6.3x11,5	
PE12	2401-000302	C-AL;100uF,20%,25V,GP,TP,6.3x11,5	
PE13	2401-000302	C-AL;100uF,20%,25V,GP,TP,6.3x11,5	
PE3	2401-001682	C-AL;82uF,20%,400V,GP,BK,22x25,10mm	⚠
PE31	2401-000302	C-AL;100uF,20%,25V,GP,TP,6.3x11,5	
PE32	2401-001998	C-AL;1000uF,20%,25V,GP,TP,10x20,5mm	
PE33	2401-000133	C-AL;1000uF,20%,16V,GP,TP,10x20,5	
PE35	2401-000360	C-AL;100uF,20%,50V,GP,TP,8x11.5,5	
PE36	2401-000133	C-AL;1000uF,20%,16V,GP,TP,10x20,5	
PE37	2401-001130	C-AL;330uF,20%,35V,GP,TP,10x16,5	
PE38	2401-002144	C-AL;47uF,20%,16V,GP,TP,5x11,5	
PE39	2401-001130	C-AL;330uF,20%,35V,GP,TP,10x16,5	
PE4	2401-000302	C-AL;100uF,20%,25V,GP,TP,6.3x11,5	
PE41	2401-002036	C-AL;1uF,20%,50V,GP,TP,5x11,2.5mm	
PE42	2401-002144	C-AL;47uF,20%,16V,GP,TP,5x11,5	
PE43	2401-002144	C-AL;47uF,20%,16V,GP,TP,5x11,5	
PE44	2401-002036	C-AL;1uF,20%,50V,GP,TP,5x11,2.5mm	
PE6	2401-001583	C-AL;47uF,20%,50V,WT,TP,6.3x11,5	
PF0A	3601-000453	FUSE-AXIAL LEAD;250V,1.6A,SLOW-BLOW,GLAS	⚠
PIC1	1203-001721	IC-PWM CONTROLLER;STR-G6153T,T0-220,5P,1	⚠
PIC2	0604-000186	PHOTO-COUPLER;TR,-,200mW,DIP-4,ST	⚠
PIC3	AC14-12006D	IC;KA431Z,TO-92,TAPING	
PIC4	1203-000122	IC-NEGA.FIXED REG.;7908,TO-220,3P,-,PLAS	
PIC5	1203-001697	IC-VOLTAGE REGULATOR;78R08,TO-220,4P,-,P	
PIC6	1203-001083	IC-VOLTAGE REGULATOR;3RF23,TO-202,4P,12.	
PL01	AC29-30050A	FILTER-LINE NOISE;-,400UH,-,250V,-	⚠
PL02	AC27-92001Q	COIL-LINE FILTER;BSF-2120Z,25MH,-,-,-	⚠
PL03	3301-000297	CORE-FERRITE BEAD;AA,3.6x1.2x5.7mm,1400,	
PL11	3301-000297	CORE-FERRITE BEAD;AA,3.6x1.2x5.7mm,1400,	
PQ1	0501-000398	TR-SMALL SIGNAL;KSC945,NPN,250mW,TO-92,T	
PQ2	0501-000616	TR-SMALL SIGNAL;KSC2328A-Y,NPN,1W,TO-92L	
PQ21	0504-000142	TR-DIGITAL;KSR2001,PNP,300MW,4.7K/4.7K,T	
PQ22	0504-000118	TR-DIGITAL;KSR1003,NPN,300MW,22K/22K,TO-	
PQ23	0502-000298	TR-POWER;KSD73,NPN,30W,TO-220,-,120-240	
PQ24	0502-000298	TR-POWER;KSD73,NPN,30W,TO-220,-,120-240	
PQ3	0504-000118	TR-DIGITAL;KSR1003,NPN,300MW,22K/22K,TO-	
PQ4	0504-000142	TR-DIGITAL;KSR2001,PNP,300MW,4.7K/4.7K,T	
PR10	2006-000262	R-CEMENT;2.7ohm,10%,2W,CB,TP,7.5x11x20.	
PR11	2001-000073	R-CARBON;33KOHM,5%,1/4W,AA,TP,2.4X6.4MM	
PR12	2001-000073	R-CARBON;33KOHM,5%,1/4W,AA,TP,2.4X6.4MM	
PR13	2001-000073	R-CARBON;33KOHM,5%,1/4W,AA,TP,2.4X6.4MM	
PR14	2001-000073	R-CARBON;33KOHM,5%,1/4W,AA,TP,2.4X6.4MM	
PR15	2003-000994	R-METAL OXIDE(S);33Kohm,5%,2W,AF,TP,3.9x	
PR16	2003-000994	R-METAL OXIDE(S);33Kohm,5%,2W,AF,TP,3.9x	
PR17	2003-000148	R-METAL OXIDE;100OHM,5%,2W,AE,TP,6X16MM	⚠
PR18	2001-000666	R-CARBON;33OHM,5%,1/8W,AA,TP,1.8X3.2MM	
PR2	2003-000148	R-METAL OXIDE;100OHM,5%,2W,AE,TP,6X16MM	
PR20	2001-000429	R-CARBON;1KOHM,5%,1/8W,AA,TP,1.8X3.2MM	
PR3	2001-000734	R-CARBON;4.7KOHM,5%,1/8W,AA,TP,1.8X3.2M	
PR31	2001-000034	R-CARBON;220OHM,5%,1/4W,AA,TP,2.4X6.4MM	
PR32	2001-000429	R-CARBON;1KOHM,5%,1/8W,AA,TP,1.8X3.2MM	
PR33	2001-000429	R-CARBON;1KOHM,5%,1/8W,AA,TP,1.8X3.2MM	
PR34	2001-000440	R-CARBON;1OHM,5%,1/8W,AA,TP,1.8X3.2MM	
PR35	2001-000362	R-CARBON;150OHM,5%,1/8W,AA,TP,1.8X3.2MM	
PR36	2001-000221	R-CARBON;1.2KOHM,5%,1/8W,AA,TP,1.8X3.2M	
PR37	2001-000429	R-CARBON;1KOHM,5%,1/8W,AA,TP,1.8X3.2MM	
PR38	2004-000869	R-METAL;3Kohm,1%,1/8W,AA,TP,1.8x3.2mm	
PR39	2004-000459	R-METAL;2.2Kohm,1%,1/8W,AA,TP,1.8x3.2m	
PR4	2001-000429	R-CARBON;1KOHM,5%,1/8W,AA,TP,1.8X3.2MM	
PR40	2003-000111	R-METAL OXIDE;0.47ohm,5%,1W,AD,TP,4.3x12	
PR5	2001-000281	R-CARBON;100OHM,5%,1/8W,AA,TP,1.8X3.2MM	
PR6	2001-000429	R-CARBON;1KOHM,5%,1/8W,AA,TP,1.8X3.2MM	
PT01	AH26-00008A	TRANS-SWITCHING;-,85V-240V,UL/CSA,EE2821	⚠
PVA01	1405-000186	VARISTOR;470V,4500A,17x12mm,TP	⚠

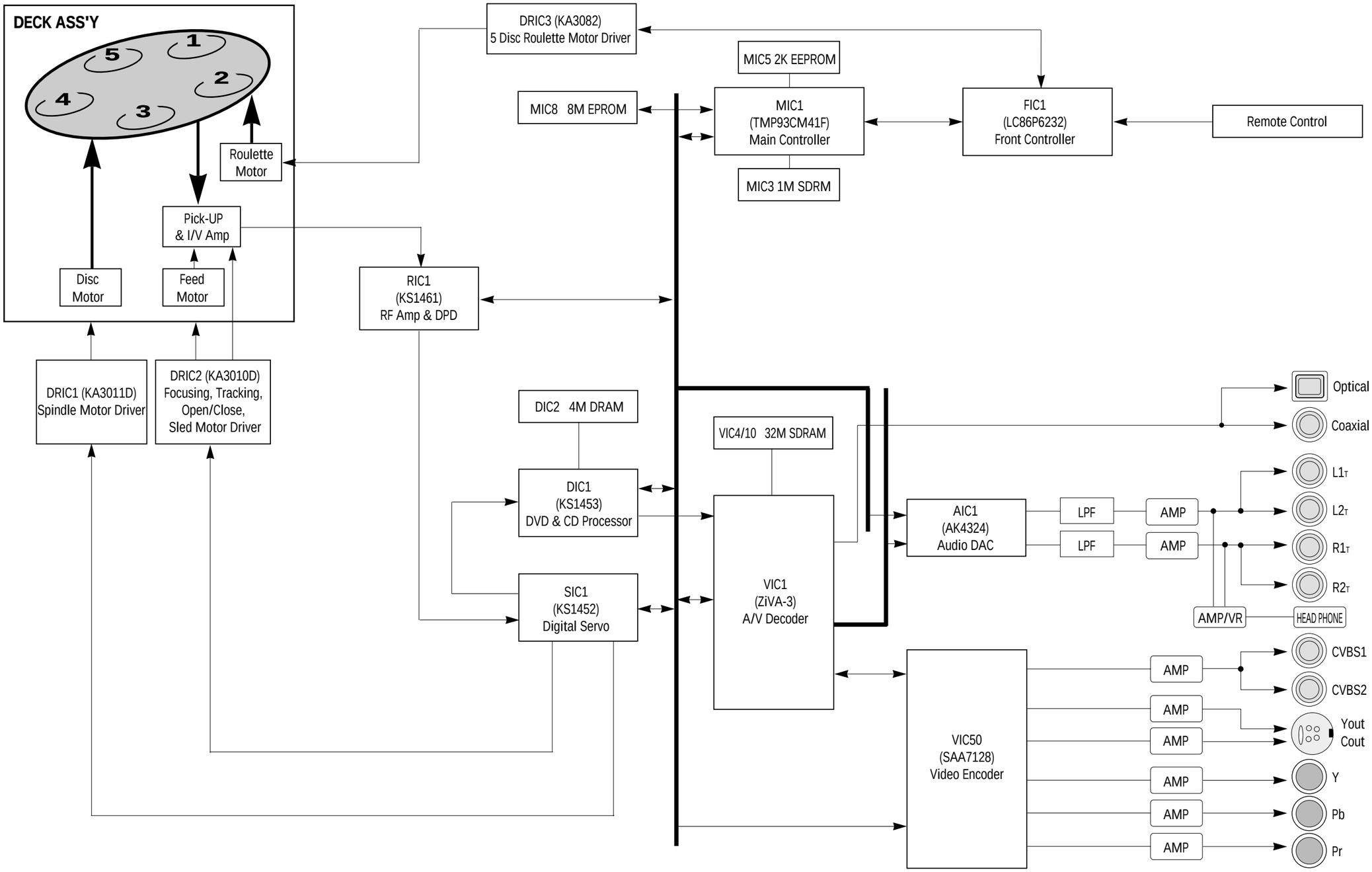
Loc.No	Part No	Description ; Specification	Remark
PZD31	0403-000716	DIODE-ZENER;MTZJ4.7B,4.7V,4.55-4.8V,500m	
RC12	2201-000812	C-CERAMIC,DISC;2.2nF,20%,400V,Y5U,BK,12.	⚠
RC13	2201-000812	C-CERAMIC,DISC;2.2nF,20%,400V,Y5U,BK,12.	⚠
RL03	3301-000297	CORE-FERRITE BEAD;AA,3.6x1.2x5.7mm,1400,	
701		**ASSY-PCB-FRONT;DVD-C700,FRONT PCB**	
FC01	2202-000807	C-CERAMIC,MLC-AXIAL;22nF,+80-20%,25V,Y5V	
FC02	2202-000807	C-CERAMIC,MLC-AXIAL;22nF,+80-20%,25V,Y5V	
FC03	2202-000807	C-CERAMIC,MLC-AXIAL;22nF,+80-20%,25V,Y5V	
FC1	2202-002037	C-CERAMIC,MLC-AXIAL;100nF,80-20%,50V,Y5V	
FC10	2203-000192	C-CERAMIC,CHIP;100nF,+80-20%,50V,Y5V,TP,	
FC14	2202-002037	C-CERAMIC,MLC-AXIAL;100nF,80-20%,50V,Y5V	
FC15	2202-002037	C-CERAMIC,MLC-AXIAL;100nF,80-20%,50V,Y5V	
FC16	2203-000444	C-CERAMIC,CHIP;1nF,10%,50V,X7R,TP,2012,-	
FC2	2203-000389	C-CERAMIC,CHIP;0.015nF,5%,50V,NP0,TP,201	
FC3	2203-000389	C-CERAMIC,CHIP;0.015nF,5%,50V,NP0,TP,201	
FC4	2203-000192	C-CERAMIC,CHIP;100nF,+80-20%,50V,Y5V,TP,	
FC6	2203-000192	C-CERAMIC,CHIP;100nF,+80-20%,50V,Y5V,TP,	
FCN01	AH39-00140A	LEAD CONNECTOR-ASSY;-,-,-,-,-,-,-,-,5100	
FCN02	3710-001550	CONNECTOR-SOCKET;8P,2R,2mm,ANGLE,AU15U	
FCN02A	3710-001550	CONNECTOR-SOCKET;8P,2R,2mm,ANGLE,AU15U	
FCN04	3708-001440	CONNECTOR-FPC/FC/PIC;24P,1mm,ANGLE,SN	
FD1	0401-000101	DIODE-SWITCHING;1N4148,100V,200mA,DO-35,	
FD10	0401-000101	DIODE-SWITCHING;1N4148,100V,200mA,DO-35,	
FD2	0401-000101	DIODE-SWITCHING;1N4148,100V,200mA,DO-35,	
FD3	0401-000101	DIODE-SWITCHING;1N4148,100V,200mA,DO-35,	
FD4	0401-000101	DIODE-SWITCHING;1N4148,100V,200mA,DO-35,	
FD8	0401-000101	DIODE-SWITCHING;1N4148,100V,200mA,DO-35,	
FD9	0403-000551	DIODE-ZENER;MTZ3.9B,3.9V,3.89-4.16V,500m	
FE1	2401-000922	C-AL;22uF,20%,16V,GP,TP,5x5,5	
FE12	2401-000249	C-AL;100uF,20%,10V,GP,TP,6.3x5,2.5	
FE13	2401-000249	C-AL;100uF,20%,10V,GP,TP,6.3x5,2.5	
FE2	2401-001507	C-AL;47uF,20%,16V,GP,TP,6.3x5,5	
FE5	2401-001507	C-AL;47uF,20%,16V,GP,TP,6.3x5,5	
FE8	2401-001507	C-AL;47uF,20%,16V,GP,TP,6.3x5,5	
FIC1	AH09-00010C	IC MICOM;LC866232,SANYO,100PIN,QFP,QIP,	
FIC2	1203-001252	IC-VOL. DETECTOR;7545,TO-92,3P,-,PLASTIC	
FIC3	0801-002166	IC-CMOS LOGIC;7SHU04,INVERTER,SSOP,5P,63	
FL1	2701-000114	INDUCTOR-AXIAL;10uH,10%,2.5x3.4mm	
FLD01	0601-001447	LED;ROUND,RED,3.1mm,650nm	
FLD03	0601-001416	LED;ROUND,GRN,3.1mm,563nm	
FLD04	0601-001416	LED;ROUND,GRN,3.1mm,563nm	
FQ01	0504-000118	TR-DIGITAL;KSR1003,NPN,300MW,22K/22K,TO-	
FQ03	0504-000118	TR-DIGITAL;KSR1003,NPN,300MW,22K/22K,TO-	
FR1	2001-000273	R-CARBON;100KOHM,5%,1/8W,AA,TP,1.8X3.2M	
FR101	2001-000273	R-CARBON;100KOHM,5%,1/8W,AA,TP,1.8X3.2M	
FR102	2001-000273	R-CARBON;100KOHM,5%,1/8W,AA,TP,1.8X3.2M	
FR103	2001-000273	R-CARBON;100KOHM,5%,1/8W,AA,TP,1.8X3.2M	
FR104	2001-000273	R-CARBON;100KOHM,5%,1/8W,AA,TP,1.8X3.2M	
FR105	2001-000290	R-CARBON;10KOHM,5%,1/8W,AA,TP,1.8X3.2MM	
FR106	2001-000290	R-CARBON;10KOHM,5%,1/8W,AA,TP,1.8X3.2MM	
FR11	2001-000449	R-CARBON;2.2KOHM,5%,1/8W,AA,TP,1.8X3.2M	
FR12	2001-000449	R-CARBON;2.2KOHM,5%,1/8W,AA,TP,1.8X3.2M	
FR13	2001-000449	R-CARBON;2.2KOHM,5%,1/8W,AA,TP,1.8X3.2M	
FR14	2001-000325	R-CARBON;120OHM,5%,1/8W,AA,TP,1.8X3.2MM	
FR16	2001-000027	R-CARBON;100OHM,5%,1/4W,AA,TP,2.4X6.4MM	
FR17	2001-000027	R-CARBON;100OHM,5%,1/4W,AA,TP,2.4X6.4MM	
FR18	2001-000449	R-CARBON;2.2KOHM,5%,1/8W,AA,TP,1.8X3.2M	
FR19	2001-000449	R-CARBON;2.2KOHM,5%,1/8W,AA,TP,1.8X3.2M	
FR20	2001-000449	R-CARBON;2.2KOHM,5%,1/8W,AA,TP,1.8X3.2M	
FR21	2007-000477	R-CHIP;1MOHM,5%,1/10W,DA,TP,2012	
FR25	2007-000931	R-CHIP;470OHM,5%,1/10W,DA,TP,2012	
FR2S	2007-000029	R-CHIP;0OHM,5%,1/10W,DA,TP,2012	
FR30	2007-000282	R-CHIP;100KOHM,5%,1/10W,DA,TP,2012	
FR31	2007-000282	R-CHIP;100KOHM,5%,1/10W,DA,TP,2012	
FR32	2007-000282	R-CHIP;100KOHM,5%,1/10W,DA,TP,2012	

Loc.No	Part No	Description ; Specification	Remark
FR33	2007-000282	R-CHIP;100KOHM,5%,1/10W,DA,TP,2012	
FR34	2007-000282	R-CHIP;100KOHM,5%,1/10W,DA,TP,2012	
FR35	2007-000282	R-CHIP;100KOHM,5%,1/10W,DA,TP,2012	
FR36	2007-000282	R-CHIP;100KOHM,5%,1/10W,DA,TP,2012	
FR37	2007-000282	R-CHIP;100KOHM,5%,1/10W,DA,TP,2012	
FR38	2007-000282	R-CHIP;100KOHM,5%,1/10W,DA,TP,2012	
FR39	2007-000282	R-CHIP;100KOHM,5%,1/10W,DA,TP,2012	
FR3S	2007-000029	R-CHIP;0OHM,5%,1/10W,DA,TP,2012	
FR40	2007-000282	R-CHIP;100KOHM,5%,1/10W,DA,TP,2012	
FR43	2001-000793	R-CARBON;47OHM,5%,1/8W,AA,TP,1.8X3.2MM	
FR44	2001-000429	R-CARBON;1KOHM,5%,1/8W,AA,TP,1.8X3.2MM	
FR45	2001-000429	R-CARBON;1KOHM,5%,1/8W,AA,TP,1.8X3.2MM	
FR46	2007-000282	R-CHIP;100KOHM,5%,1/10W,DA,TP,2012	
FR4S	2007-000029	R-CHIP;0OHM,5%,1/10W,DA,TP,2012	
FR5	2001-000325	R-CARBON;120OHM,5%,1/8W,AA,TP,1.8X3.2MM	
FR51	2007-000029	R-CHIP;0OHM,5%,1/10W,DA,TP,2012	
FR52	2007-000029	R-CHIP;0OHM,5%,1/10W,DA,TP,2012	
FR53	2007-000282	R-CHIP;100KOHM,5%,1/10W,DA,TP,2012	
FR54	2007-000282	R-CHIP;100KOHM,5%,1/10W,DA,TP,2012	
FR55	2001-000273	R-CARBON;100KOHM,5%,1/8W,AA,TP,1.8X3.2M	
FR56	2001-000429	R-CARBON;1KOHM,5%,1/8W,AA,TP,1.8X3.2MM	
FR6	2001-000325	R-CARBON;120OHM,5%,1/8W,AA,TP,1.8X3.2MM	
FR6S	2007-000282	R-CHIP;100KOHM,5%,1/10W,DA,TP,2012	
FR7S	2007-000282	R-CHIP;100KOHM,5%,1/10W,DA,TP,2012	
FR8S	2007-000282	R-CHIP;100KOHM,5%,1/10W,DA,TP,2012	
FRE01	AH59-60001J	MODULE-REMOCON;GP1U271R,38KHZ,-,MESH,-,	
FSW01	3404-000165	SWITCH-TACT;12V,50mA,160gf+-50gf,6x6mm,S	
FSW02	3404-000165	SWITCH-TACT;12V,50mA,160gf+-50gf,6x6mm,S	
FSW03	3404-000165	SWITCH-TACT;12V,50mA,160gf+-50gf,6x6mm,S	
FSW04	3404-000165	SWITCH-TACT;12V,50mA,160gf+-50gf,6x6mm,S	
FSW05	3404-000165	SWITCH-TACT;12V,50mA,160gf+-50gf,6x6mm,S	
FSW06	3404-000165	SWITCH-TACT;12V,50mA,160gf+-50gf,6x6mm,S	
FY1	2802-000108	RESONATOR-CERAMIC;12MHZ,0.5%,BK,10.0X5.0	
VFD1	AH07-00014A	VF-DISPLAY;-,-,25X104MM,DVD-909/DOM	
702		**ASSY PCB-KEY;DVD-C700/XAA,KEY PCB**	
FC2	2203-000389	C-CERAMIC,CHIP;0.015nF,5%,50V,NP0,TP,201	
FCN03	3711-004388	CONNECTOR-HEADER;NOWALL,8P,2R,2mm,ANGLE,	
FCN03A	3711-004388	CONNECTOR-HEADER;NOWALL,8P,2R,2mm,ANGLE,	
FLD02	0601-001448	LED;ROUND,ORG,3.1mm,610nm	
FSW24	3404-000165	SWITCH-TACT;12V,50mA,160gf+-50gf,6x6mm,S	
FSW25	3404-000165	SWITCH-TACT;12V,50mA,160gf+-50gf,6x6mm,S	
FSW26	3404-000165	SWITCH-TACT;12V,50mA,160gf+-50gf,6x6mm,S	
FSW27	3404-000165	SWITCH-TACT;12V,50mA,160gf+-50gf,6x6mm,S	
FSW28	3404-000165	SWITCH-TACT;12V,50mA,160gf+-50gf,6x6mm,S	
FSW29	3404-000165	SWITCH-TACT;12V,50mA,160gf+-50gf,6x6mm,S	
FSW30	3404-000165	SWITCH-TACT;12V,50mA,160gf+-50gf,6x6mm,S	
FSW31	3404-000165	SWITCH-TACT;12V,50mA,160gf+-50gf,6x6mm,S	
FSW32	3404-000165	SWITCH-TACT;12V,50mA,160gf+-50gf,6x6mm,S	
FSW33	3404-000165	SWITCH-TACT;12V,50mA,160gf+-50gf,6x6mm,S	
FSW34	3404-000165	SWITCH-TACT;12V,50mA,160gf+-50gf,6x6mm,S	
FSW35	3404-000165	SWITCH-TACT;12V,50mA,160gf+-50gf,6x6mm,S	
FSW36	3404-000165	SWITCH-TACT;12V,50mA,160gf+-50gf,6x6mm,S	
FSW37	3404-000165	SWITCH-TACT;12V,50mA,160gf+-50gf,6x6mm,S	
JOG01	3406-001037	SWITCH-ROTARY;5V,1MA,24PULSE/NO CLICK,12	
703		**ASSY PCB-HEADPHONE;DVD-C700/XAA,HEADPHON**	
CON23	3711-001061	CONNECTOR-HEADER;BOX,6P,1R,2mm,ANGLE,SN	
HPJ01	3722-000345	JACK-PHONE;3P,6.4mm,AG,BLK,-	
KC1	2202-002037	C-CERAMIC,MLC-AXIAL;100nF,80-20%,50V,Y5V	
KC101	2202-002127	C-CERAMIC,MLC-AXIAL;10NF,30%,16V,Y5S,TP,	
KC102	2202-002127	C-CERAMIC,MLC-AXIAL;10NF,30%,16V,Y5S,TP,	
KC2	2202-002037	C-CERAMIC,MLC-AXIAL;100nF,80-20%,50V,Y5V	
KCE8	2401-000249	C-AL;100uF,20%,10V,GP,TP,6.3x5,2.5	
KCE9	2401-000249	C-AL;100uF,20%,10V,GP,TP,6.3x5,2.5	
KEC10	2401-001225	C-AL;4.7uF,20%,16V,GP,TP,3x5,5	
KEC11	2401-001225	C-AL;4.7uF,20%,16V,GP,TP,3x5,5	
KOP03	1201-000191	IC-OP AMP;4558,DIP,8P,300MIL,DUAL,20V/mV	
KR1	2001-000666	R-CARBON;33OHM,5%,1/8W,AA,TP,1.8X3.2MM	
KR2	2001-000666	R-CARBON;33OHM,5%,1/8W,AA,TP,1.8X3.2MM	
KR3	2001-000290	R-CARBON;10KOHM,5%,1/8W,AA,TP,1.8X3.2MM	
KR32	2001-000331	R-CARBON;12KOHM,5%,1/8W,AA,TP,1.8X3.2MM	
KR33	2001-000734	R-CARBON;4.7KOHM,5%,1/8W,AA,TP,1.8X3.2M	
KR34	2001-000331	R-CARBON;12KOHM,5%,1/8W,AA,TP,1.8X3.2MM	
KR35	2001-000734	R-CARBON;4.7KOHM,5%,1/8W,AA,TP,1.8X3.2M	
KR4	2001-000290	R-CARBON;10KOHM,5%,1/8W,AA,TP,1.8X3.2MM	
KVR4	2101-001054	VR-ROTARY;10KOHM,20%,1/20W,SIDE	
KZD1	0403-001211	DIODE-ZENER;MTZJ12B,11.44-12.03V,500MW,D	
KZD2	0403-001211	DIODE-ZENER;MTZJ12B,11.44-12.03V,500MW,D	
KZD3	0403-001211	DIODE-ZENER;MTZJ12B,11.44-12.03V,500MW,D	
KZD4	0403-001211	DIODE-ZENER;MTZJ12B,11.44-12.03V,500MW,D	
H230	**AH41-00140A**	**PCB-DECK ASSY**	
CN1	3708-001394	CONNECTOR-FPC/FC/PIC;11P,1MM,ANGLE,SN	
CN1A	3809-001158	CABLE-FLAT;30V,-20to+80C,50mm,11P,1mm,UL	
CN2	3708-001395	CONNECTOR-FPC/FC/PIC;11P,1MM,ANGLE,SN	
CN4	3711-004322	CONNECTOR-HEADER;NOWALL/2LAY,6P,2R,2MM,S	
CN5	3708-001448	CONNECTOR-FPC/FC/PIC;36P,1.25mm,ANGLE,SN	
CN5A	3809-001156	CABLE-FLAT;30V,-20to+80C,420mm,36P,1.25m	
DRC12	2202-002037	C-CERAMIC,MLC-AXIAL;100nF,80-20%,50V,Y5V	
DRC16	2202-002037	C-CERAMIC,MLC-AXIAL;100nF,80-20%,50V,Y5V	
DRC38	2202-002037	C-CERAMIC,MLC-AXIAL;100nF,80-20%,50V,Y5V	
DRE10	2401-001475	C-AL;47uF,20%,10V,GP,TP,6.3x5,5mm	
DRE8	2401-001475	C-AL;47uF,20%,10V,GP,TP,6.3x5,5mm	
DRE9	2401-001475	C-AL;47uF,20%,10V,GP,TP,6.3x5,5mm	
DRR14	2001-000405	R-CARBON;180OHM,5%,1/8W,AA,TP,1.8X3.2MM	
DRR18	2001-000685	R-CARBON;390ohm,2%,1/8W,AD,TP,1.8x3.2mm	
DRR2	2001-000405	R-CARBON;180OHM,5%,1/8W,AA,TP,1.8X3.2MM	
SL1	2701-000122	INDUCTOR-AXIAL;12uH,5%,2.4x3.4mm	
SW1	AH34-00005A	SWITCH-;-,30V,-,-,100M OHM,-,-,-,-	
H440	**AH41-00130A**	**PCB-PULLEY MOTOR ASSY**	
TCN01	3708-001444	CONNECTOR-FPC/FC/PIC;6P,1.25mm,STRAIGHT,	
TCN02	3710-001248	CONNECTOR-SOCKET;3P,1R,2.5mm,STRAIGHT,SN	
TCN03	3708-001445	CONNECTOR-FPC/FC/PIC;11P,1.25mm,ANGLE,SN	
TCN03A	3809-001153	CABLE-FLAT;30V,-20to+80C,330mm,11P,1.25m	
H450	**AH41-00135A**	**PCB-S/W ASSY**	
SCN01	3711-003379	CONNECTOR-HEADER;NOWALL,3P,1R,2.5mm,STRA	
SSW01	AH34-00008A	SWITCH-MICRO;MLS-24,-,-,DP-4,-,-,-,-,-	
SSW02	AH34-00008A	SWITCH-MICRO;MLS-24,-,-,DP-4,-,-,-,-,-	
H530	**AH41-00129A**	**PCB-SENSOR ASSY**	
LC01	2202-002037	C-CERAMIC,MLC-AXIAL;100nF,80-20%,50V,Y5V	
LC02	2202-002037	C-CERAMIC,MLC-AXIAL;100nF,80-20%,50V,Y5V	
LCN01	3708-001443	CONNECTOR-FPC/FC/PIC;6P,1.25mm,ANGLE,SN	
LCN01A	3809-001152	CABLE-FLAT;30V,-20to+80C,200mm,6P,1.25mm	
LCN02	3711-000826	CONNECTOR-HEADER;BOX,2P,1R,2mm,ANGLE,SN	
LR01	2001-000281	R-CARBON;100OHM,5%,1/8W,AA,TP,1.8X3.2MM	
LR02	2001-000281	R-CARBON;100OHM,5%,1/8W,AA,TP,1.8X3.2MM	
LR03	2001-000660	R-CARBON;33KOHM,5%,1/8W,AA,TP,1.8X3.2MM	
LR04	2001-000660	R-CARBON;33KOHM,5%,1/8W,AA,TP,1.8X3.2MM	
LSS01	AH32-00002A	SENSOR-ROULETTE;-,-,DP-4,-,-,-,-,-,-	
LSS02	0604-001005	PHOTO-INTERRUPTER;TR,-,-,DIP-4,BK	

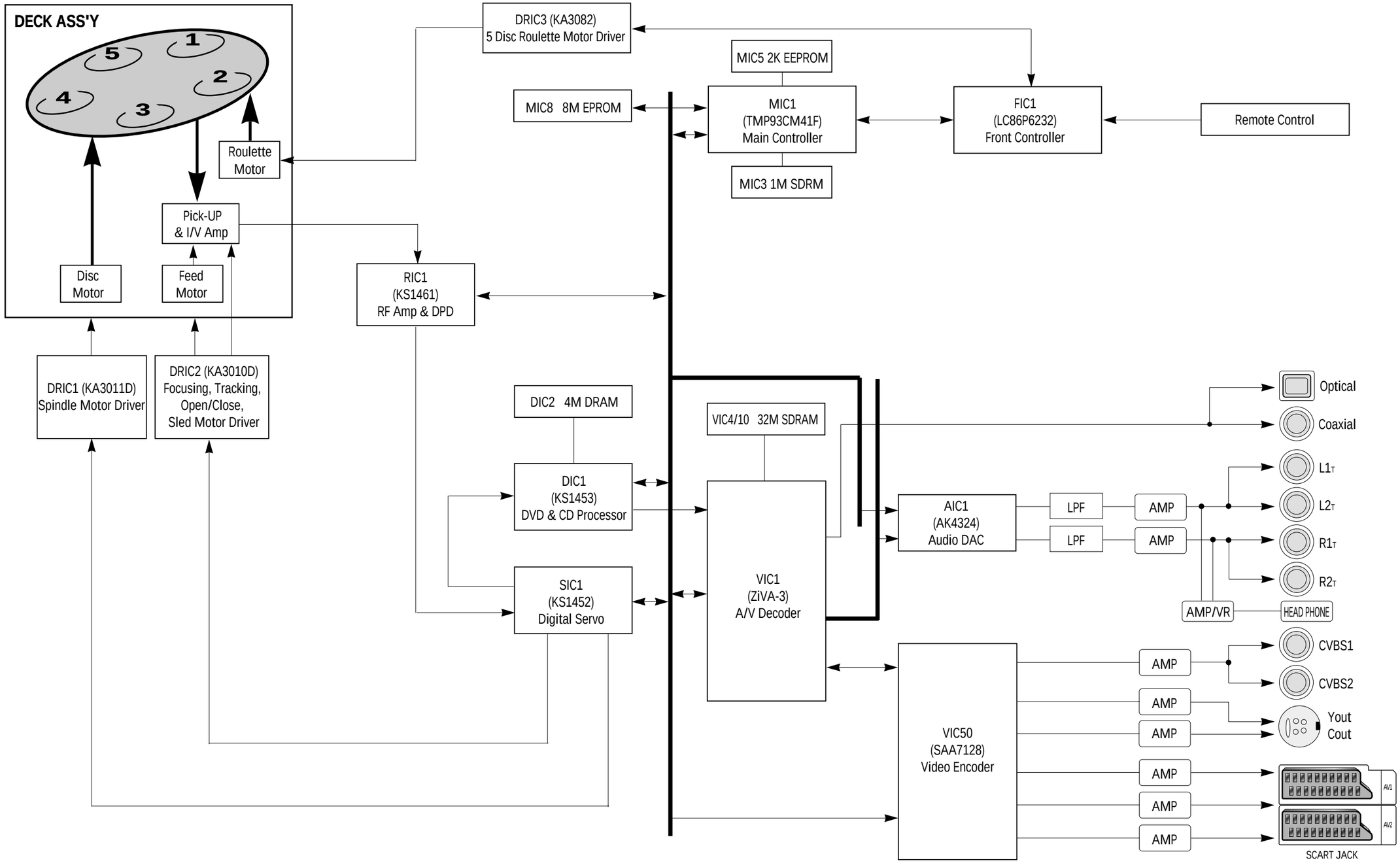
MEMO

9. Block Diagrams

9-1 NTSC



9-2 PAL


DECK ASS'Y
1
2
3
4
5
Roulette Motor
Pick-UP & I/V Amp
Disc Motor
Feed Motor
DRIC1 (KA3011D) Spindle Motor Driver
DRIC2 (KA3010D) Focusing, Tracking, Open/Close, Sled Motor Driver
DRIC3 (KA3082) 5 Disc Roulette Motor Driver
RIC1 (KS1461) RF Amp & DPD
DIC2 4M DRAM
DIC1 (KS1453) DVD & CD Processor
SIC1 (KS1452) Digital Servo
MIC5 2K EEPROM
MIC8 8M EPROM
MIC1 (TMP93CM41F) Main Controller
MIC3 1M SDRM
FIC1 (LC86P6232) Front Controller
Remote Control
VIC4/10 32M SDRAM
VIC1 (ZiVA-3) A/V Decoder
AIC1 (AK4324) Audio DAC
LPF
LPF
AMP
AMP
AMP/VR
HEAD PHONE
VIC50 (SAA7128) Video Encoder
AMP
AMP
AMP
AMP
AMP
AMP
Optical
Coaxial
L1T
L2T
R1T
R2T
CVBS1
CVBS2
Yout
Cout
AV1
AV2
SCART JACK

10. PCB Diagrams

10-1 Main ---------- 10-2

10-2 Jack ---------- 10-3

10-3 S.M.P.S. ---------- 10-4

10-4 Front ---------- 10-5

10-5 Key ---------- 10-6

10-6 Head Phone ---------- 10-7

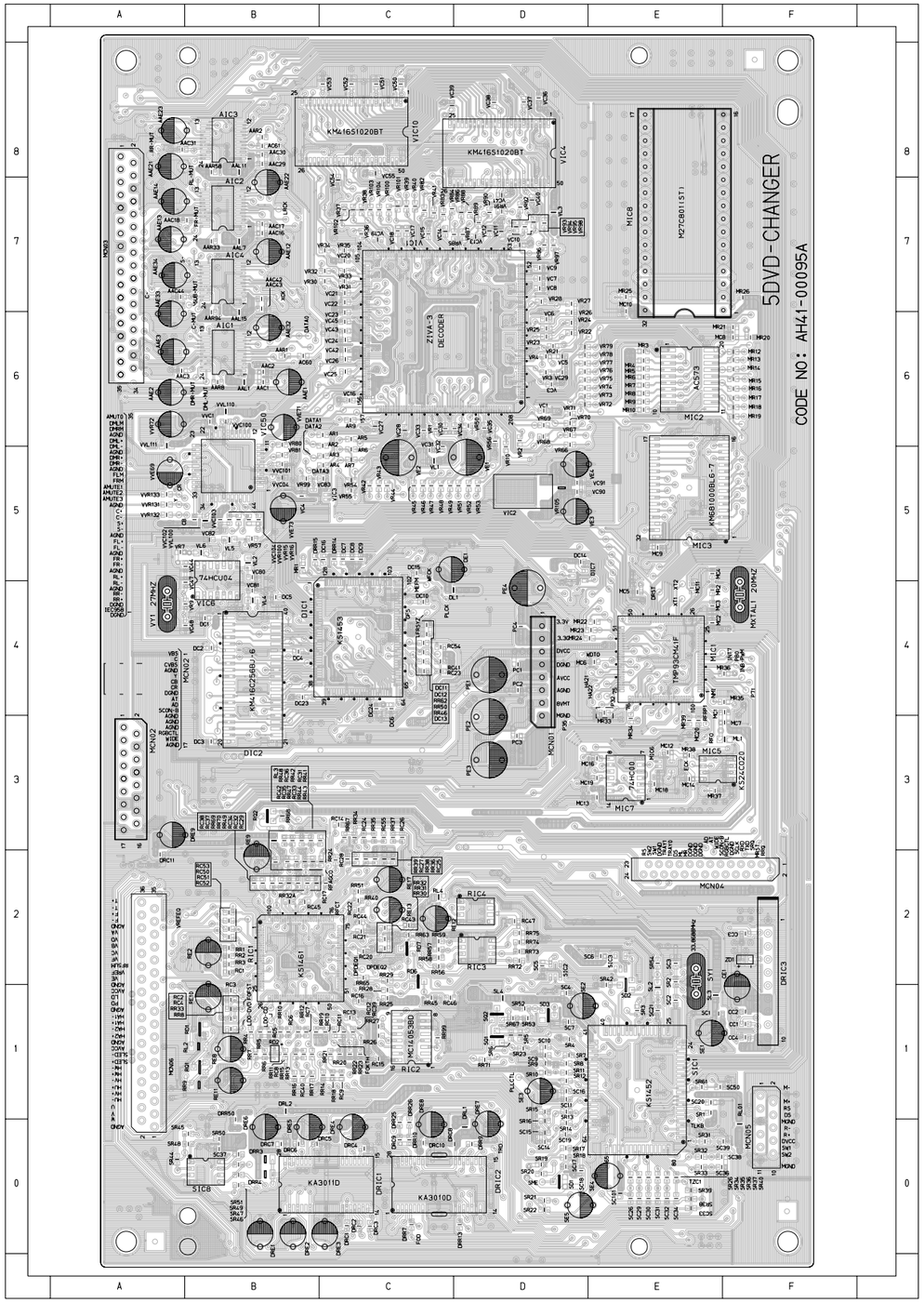
10-7 Deck ---------- 10-7

10-8 Switch ---------- 10-8

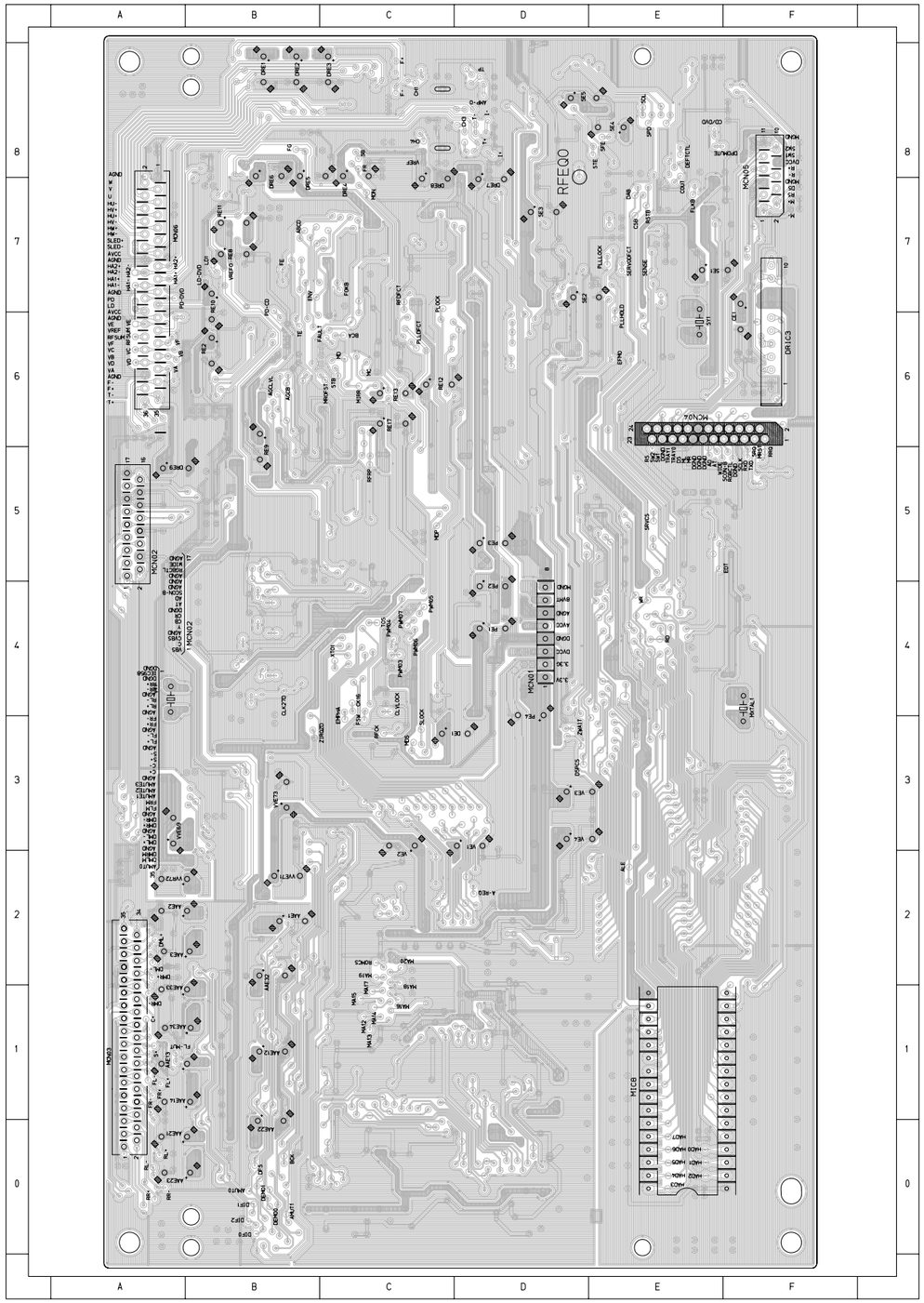
10-9 Motor ---------- 10-8

10-1 Main

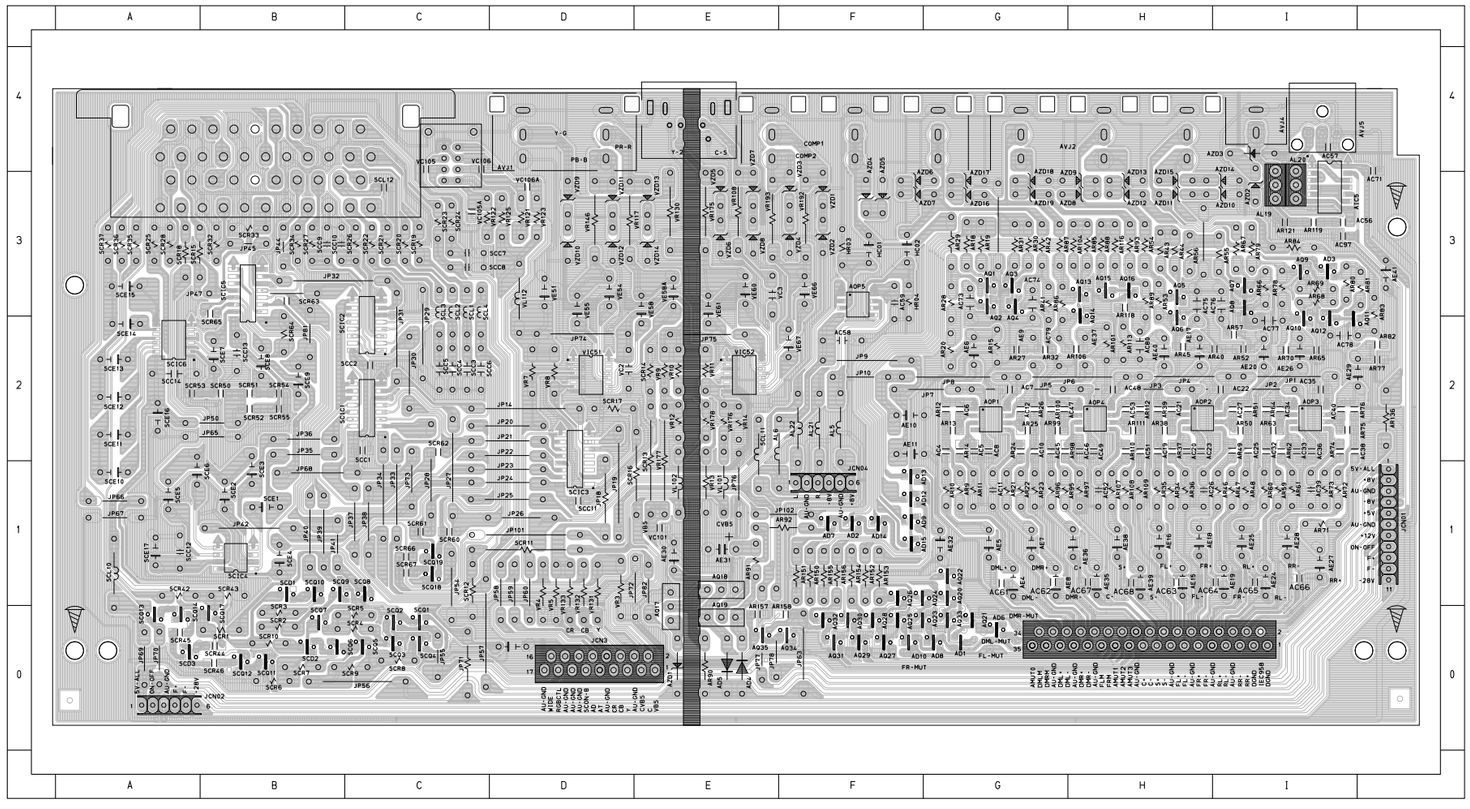
COMPONENT SIDE



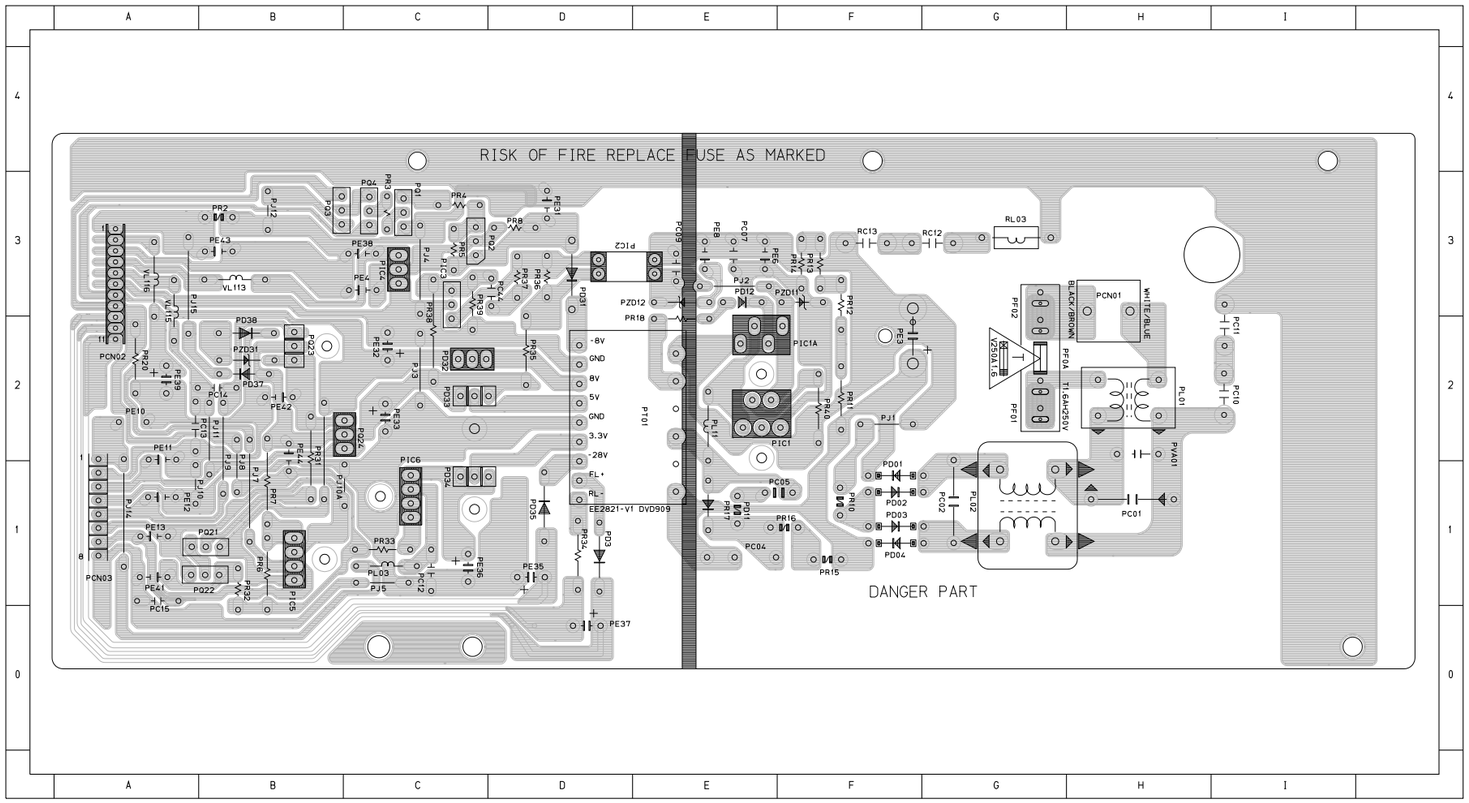
SOLDER SIDE



10-2 Jack

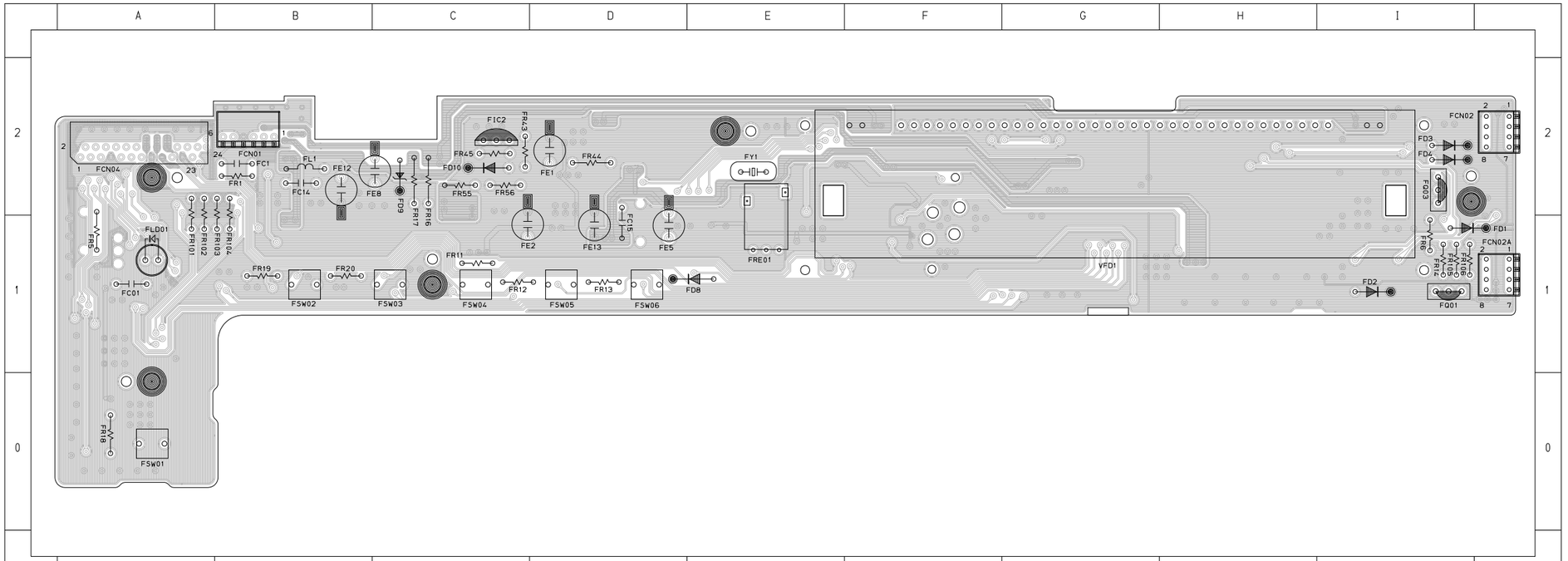


10-3 S.M.P.S.

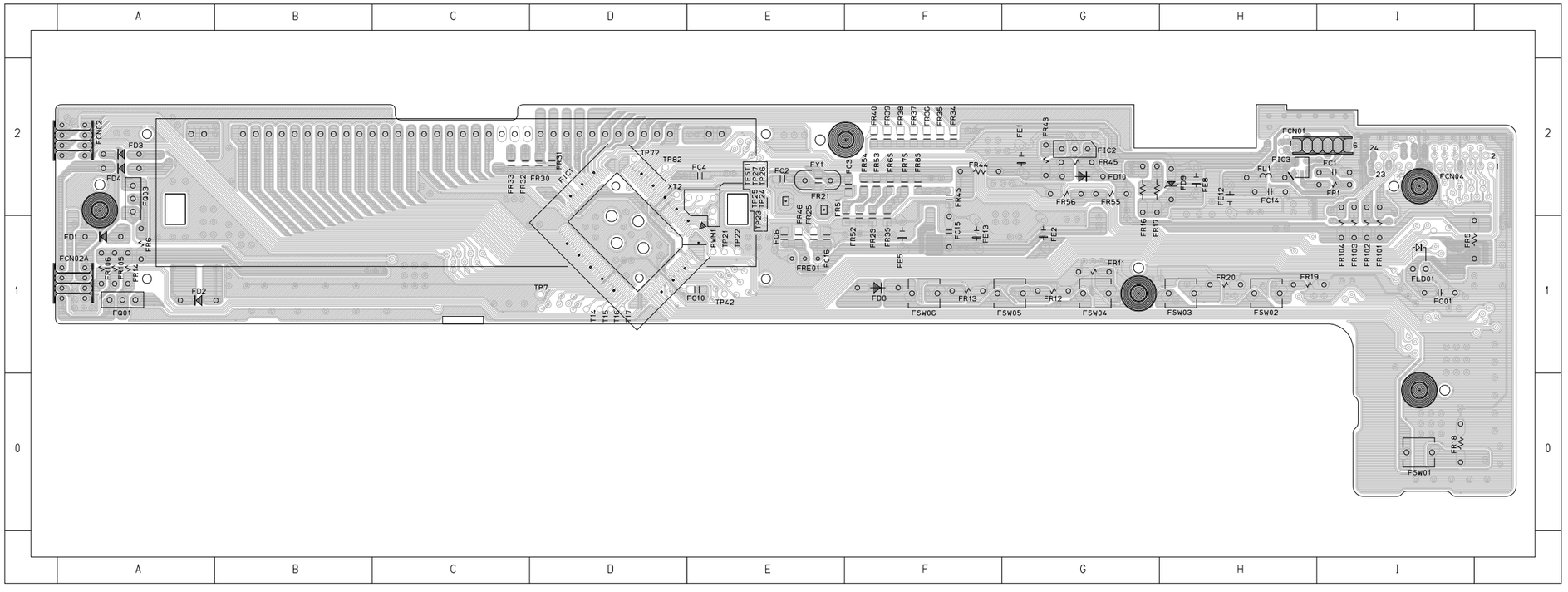

RISK OF FIRE REPLACE FUSE AS MARKED
DANGER PART
EE2821-V1 DVD909
-8V
GND
8V
5V
GND
3.3V
28V
FL+
RL-
WHITE/BLUE
BLACK/BROWN
T1.6AH250V
V250A1.6E

10-4 Front

COMPONENT SIDE

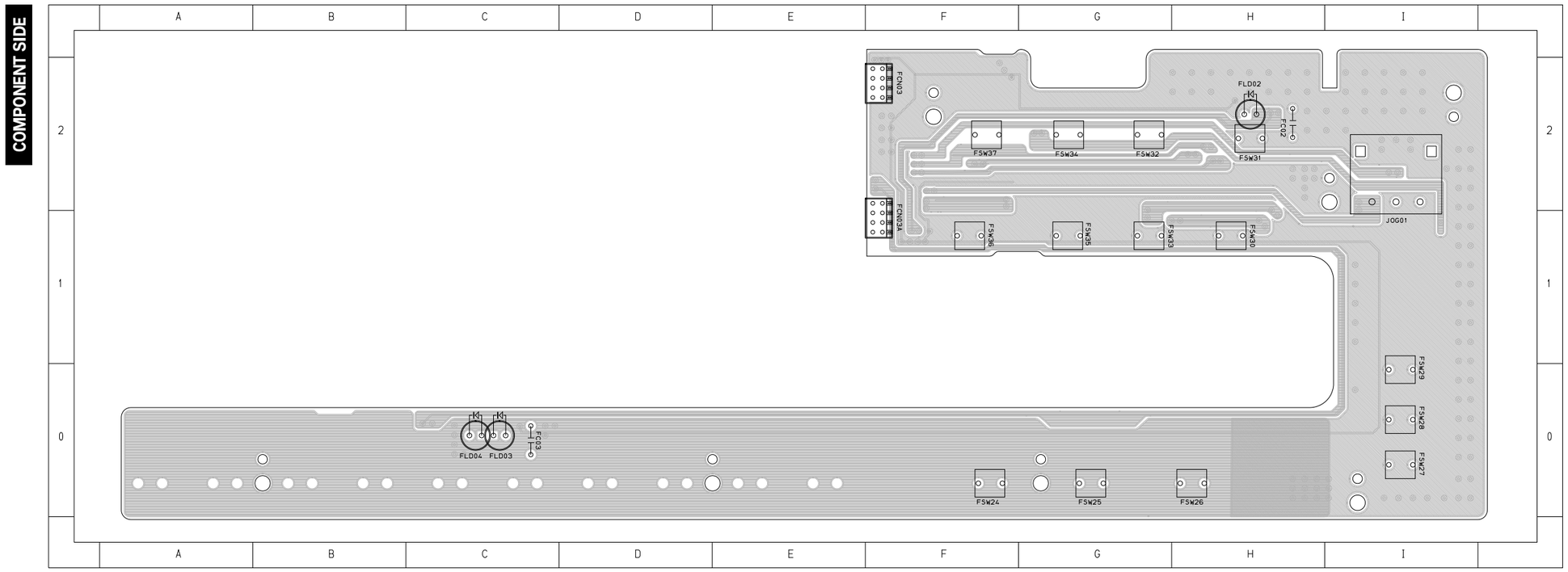


SOLDER SIDE

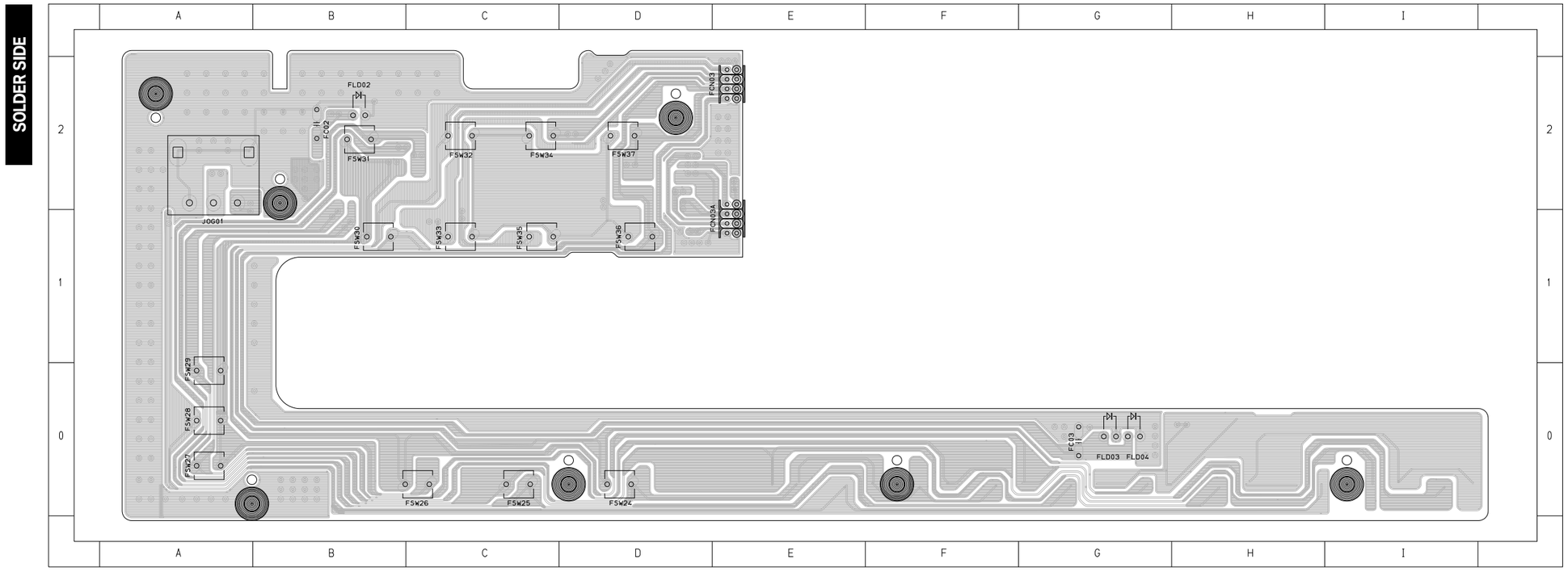


10-5 Key

COMPONENT SIDE

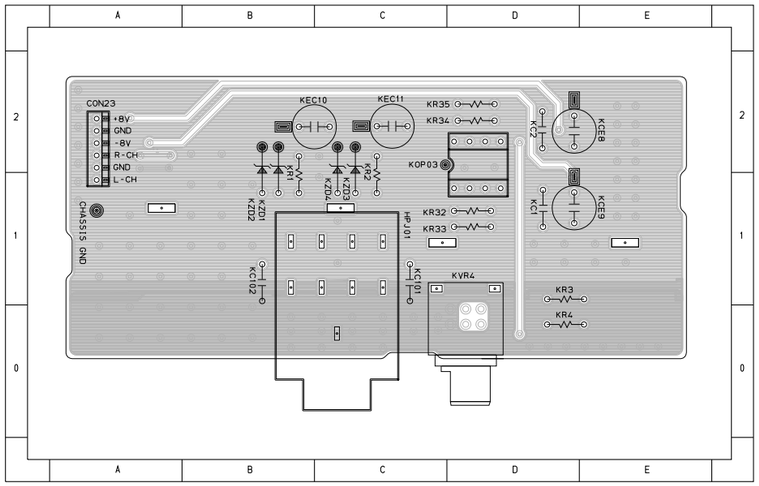


SOLDER SIDE

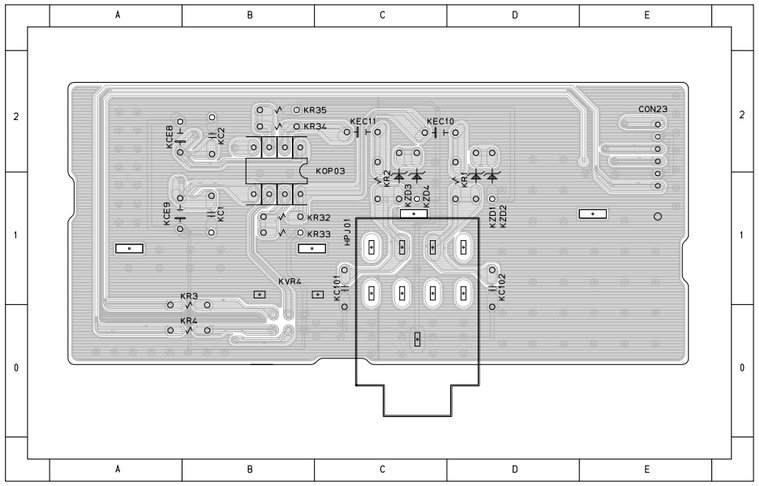


10-6 Head Phone

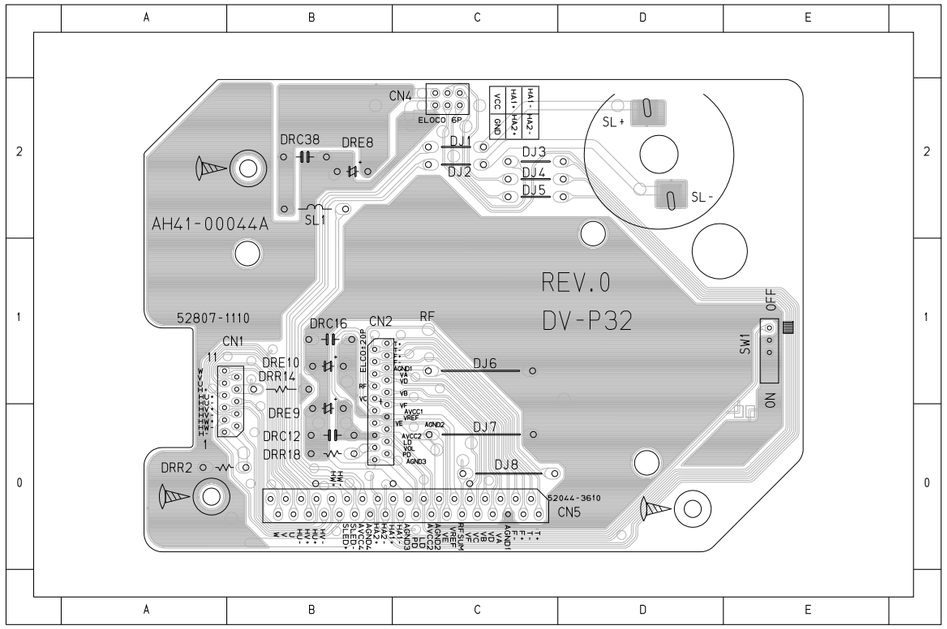
COMPONENT SIDE



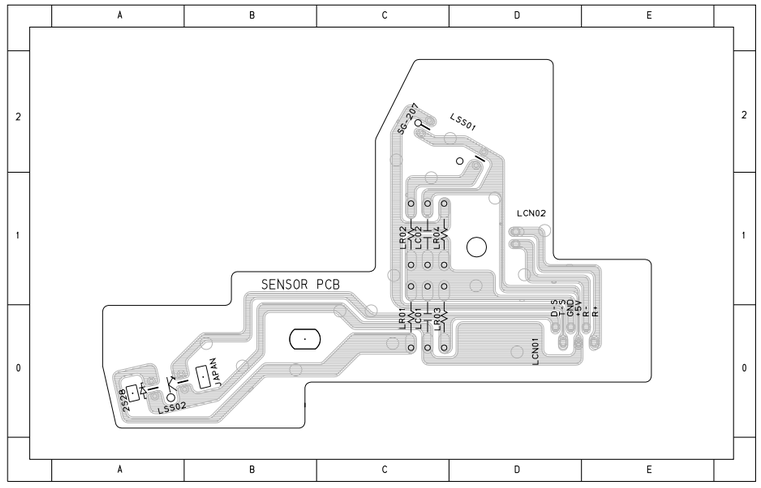
SOLDER SIDE



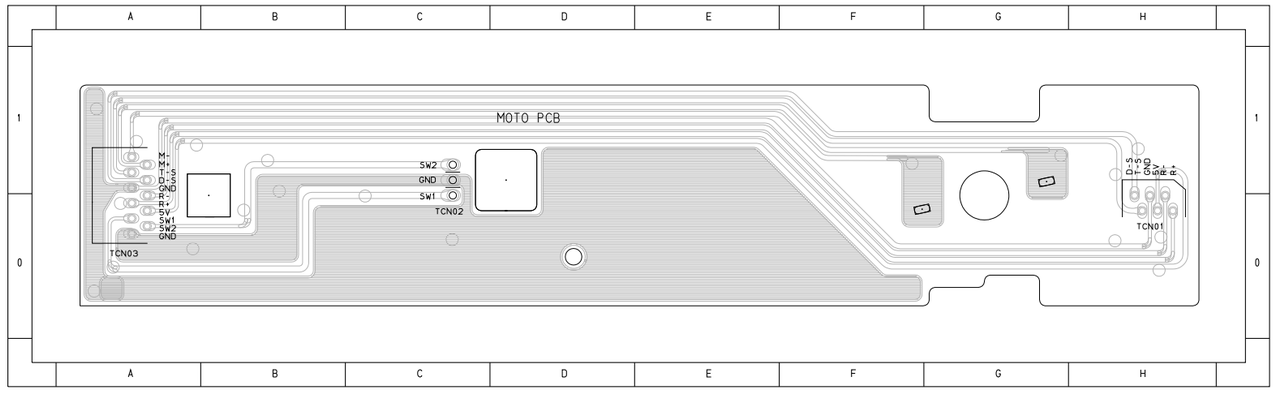
10-7 Deck



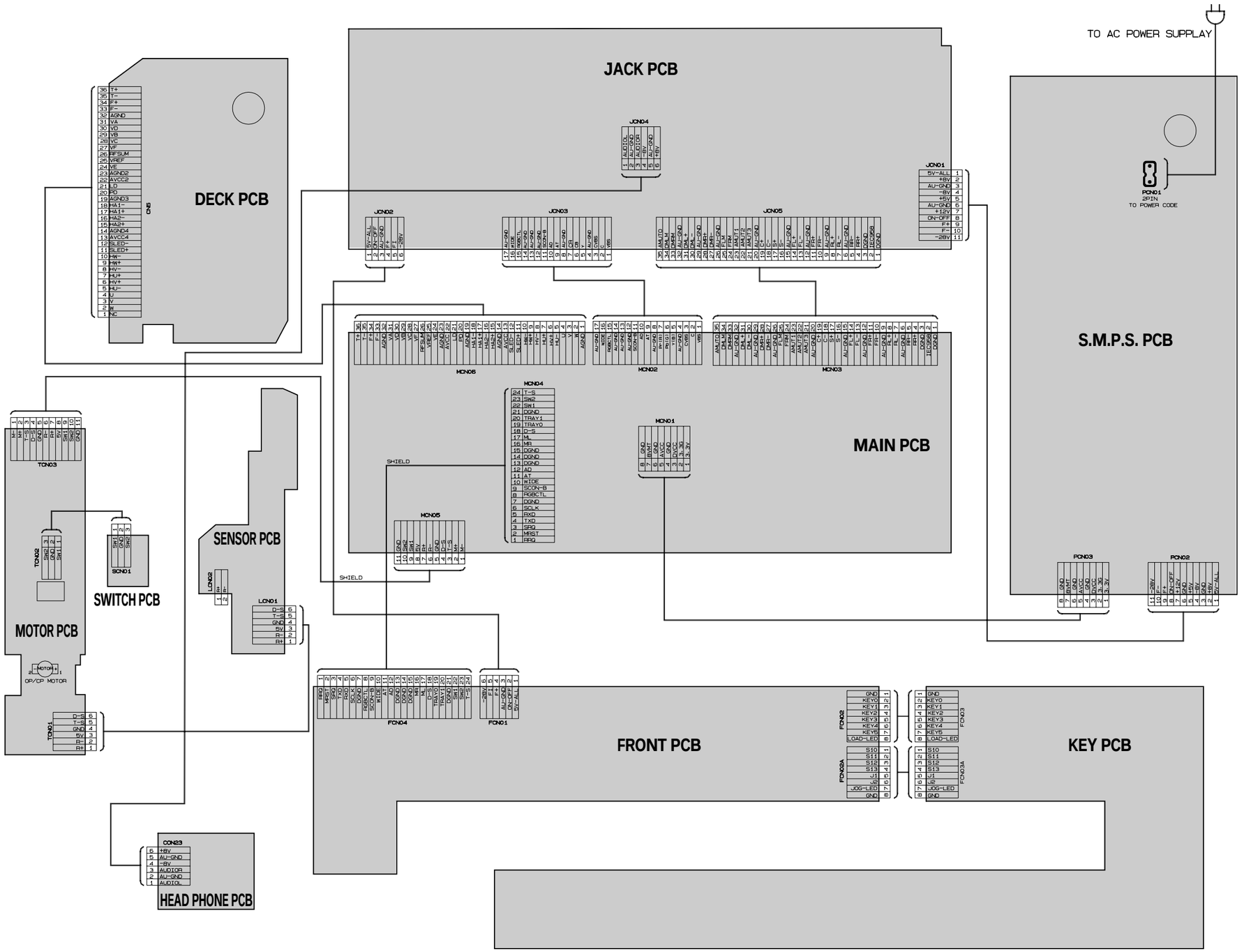
10-8 Sensor



10-9 Motor



11. Wiring Diagram

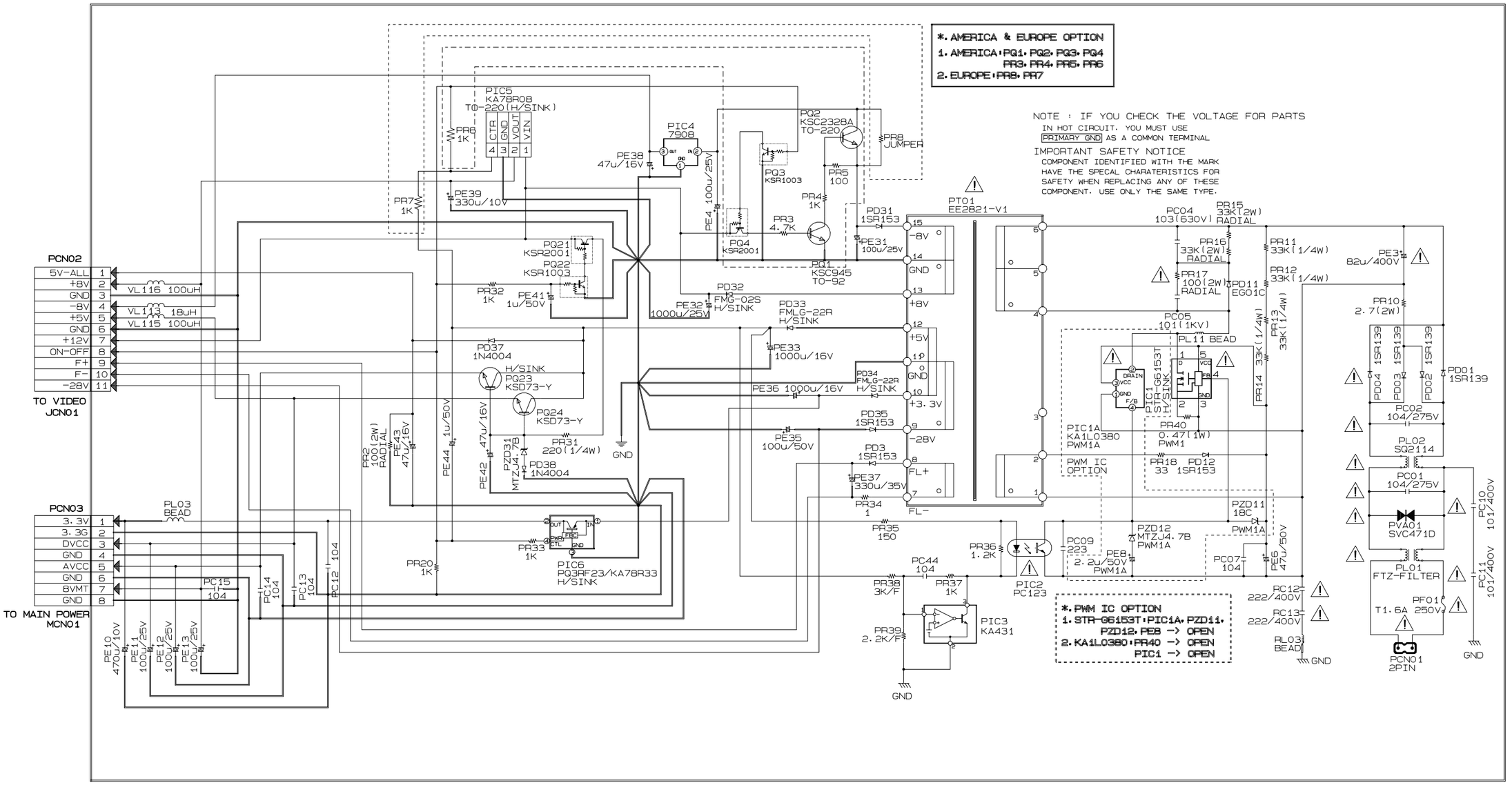


MEMO

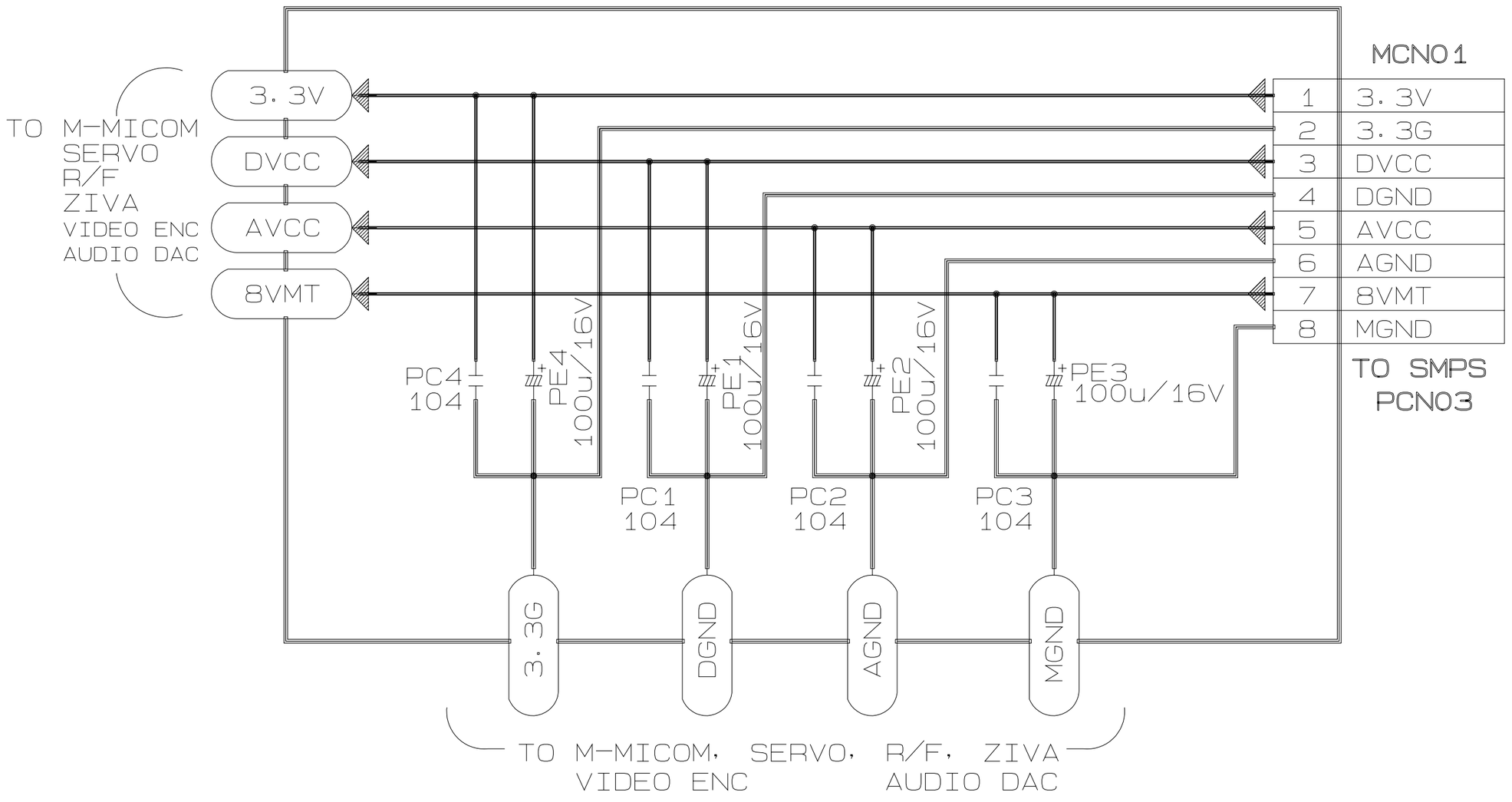
12. Schematic Diagrams

12-1 S.M.P.S. - - -

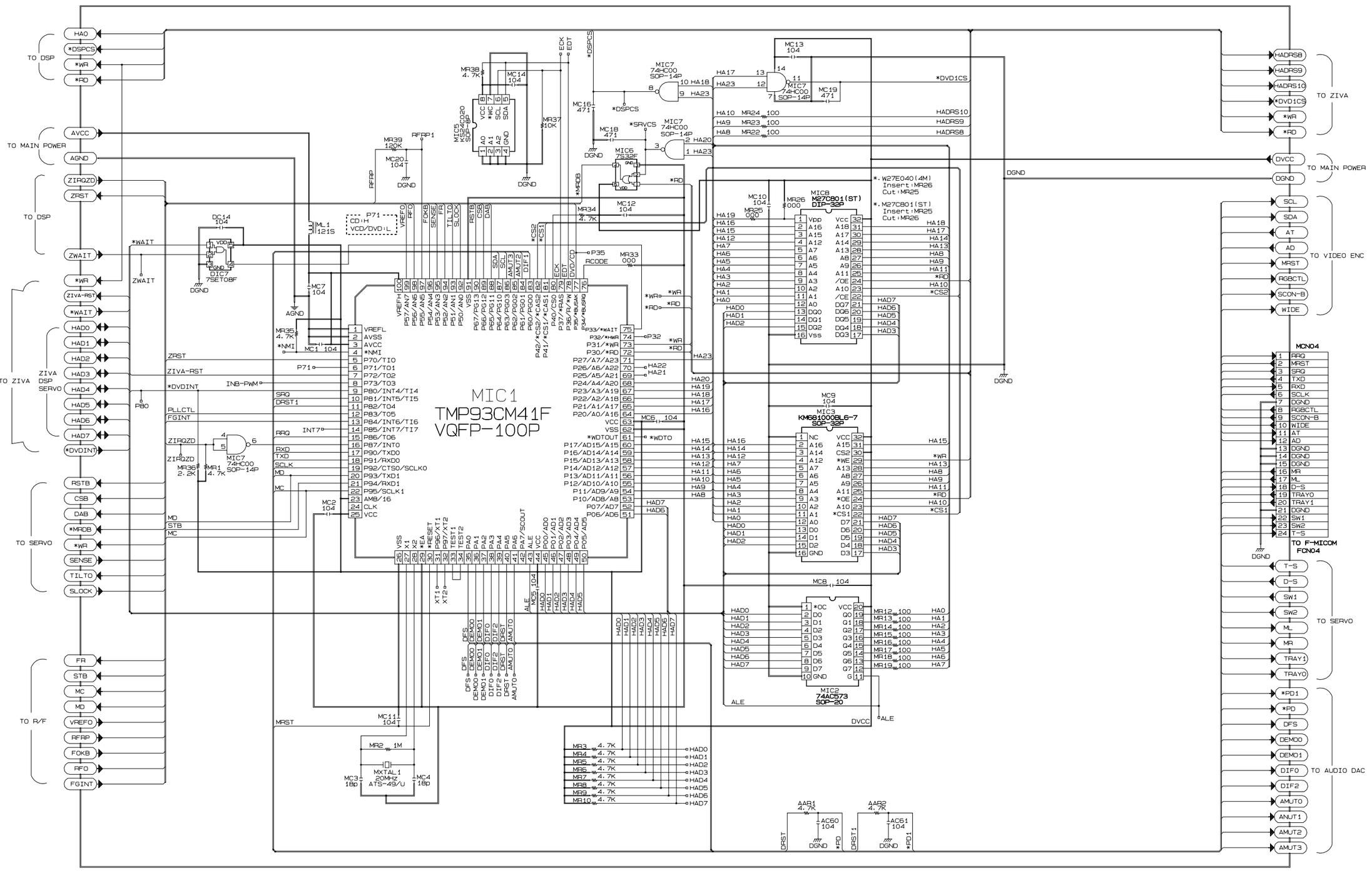
12-1 S.M.P.S.


*. AMERICA & EUROPE OPTION
1. AMERICA : PQ1, PQ2, PQ3, PQ4 PR3, PR4, PR5, PR6
2. EUROPE : PR8, PR7
NOTE : IF YOU CHECK THE VOLTAGE FOR PARTS IN HOT CIRCUIT. YOU MUST USE PRIMARY GND AS A COMMON TERMINAL
IMPORTANT SAFETY NOTICE
COMPONENT IDENTIFIED WITH THE MARK HAVE THE SPECAL CHARATERISTICS FOR SAFETY WHEN REPLACING ANY OF THESE COMPONENT. USE ONLY THE SAME TYPE.
PCN02
5V-ALL 1
+8V 2
GND 3
-8V 4
+5V 5
GND 6
+12V 7
ON-OFF 8
F+ 9
F- 10
-28V 11
TO VIDEO JCN01
PCN03
3.3V 1
3.3G 2
DVCC 3
GND 4
AVCC 5
GND 6
8VMT 7
GND 8
TO MAIN POWER MCN01
PIC5 KA78R08 TO-220(H/SINK)
PIC4 7908
PQ2 KSC2328A TO-220
PR8 JUMPER
PR6 1K
PE38 47u/16V
PQ3 KSR1003
PR5 100
PE4 100u/25V
PR7 1K
PE39 330u/10V
PR4 1K
PR3 4.7K
PQ4 KSR2001
PD31 1SR153
PE31 100u/25V
PQ1 KSC945 TO-92
PQ21 KSR2001
PQ22 KSR1003
PR32 1K
PE41 1u/50V
PD32 FMG-02S H/SINK
PE32 1000u/25V
PD33 FMLG-22R H/SINK
PE33 1000u/16V
PD34 FMLG-22R H/SINK
PE36 1000u/16V
PD35 1SR153
PE35 100u/50V
PD3 1SR153
PE37 330u/35V
PR34 1
PR35 150
PD37 1N4004
H/SINK
PQ23 KSD73-Y
PQ24 KSD73-Y
PR31 220(1/4W)
PD38 1N4004
PZD31 MTZJ4.7B
PR2 100(2W) RADIAL
PC13 47u/16V
PE44 1u/50V
PE42 47u/16V
PR33 1K
PIC6 PQ3RF23/KA78R33 H/SINK
PR20 1K
PC15 104
PC14 104
PC13 104
PC12 104
PE10 470u/10V
PE1 100u/25V
PE12 100u/25V
PE13 100u/25V
PL03 BEAD
VL116 100uH
VL114 18uH
VL115 100uH
PT01 EE2821-V1
PC04 103(630V)
PR15 33K(2W) RADIAL
PR16 33K(2W) RADIAL
PR17 100(2W) RADIAL
PD11 EG01C
PC05 101(1KV)
PL11 BEAD
PR11 33K(1/4W)
PR12 33K(1/4W)
PR13 33K(1/4W)
PR14 33K(1/4W)
PE3 82u/400V
PR10 2.7(2W)
PD04 1SR139
PD03 1SR139
PD02 1SR139
PD01 1SR139
PC02 104/275V
PL02 SQ2114
PC01 104/275V
PVA01 SVC471D
PL01 FTZ-FILTER
PF01 T1.6A 250V
PCN01 2PIN
PC10 101/400V
PC11 101/400V
PIC1 STR-G6153T (SIP/SINK)
PR40 0.47(1W) PWM1
PIC1A KA1L0380 PWM1A
PWM IC OPTION
PR18 33
PD12 1SR153
PZD11 18C
PWM1A
PZD12 MTZJ4.7B PWM1A
PC09 223
PE8 2.2u/50V PWM1A
PC07 104
PE6 47u/50V
PR36 1.2K
PIC2 PC123
PC44 104
PR38 3K/F
PR37 1K
PR39 2.2K/F
PIC3 KA431
RC12 222/400V
RC13 222/400V
RL03 BEAD
*. PWM IC OPTION
1. STR-G6153T : PIC1A, PZD11, PZD12, PE8 -> OPEN
2. KA1L0380 : PR40 -> OPEN
PIC1 -> OPEN
GND

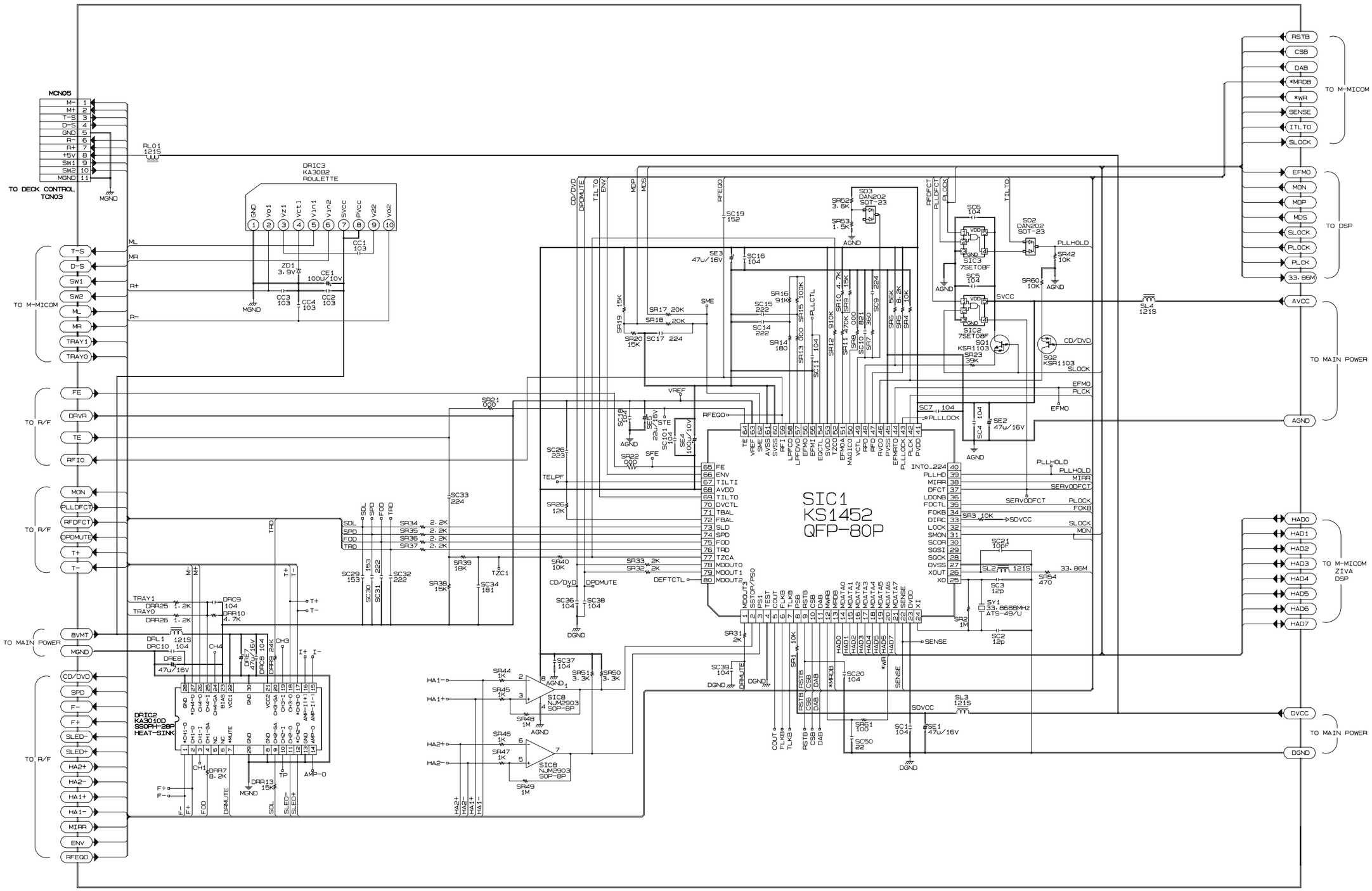
12-2 Main Power Supply



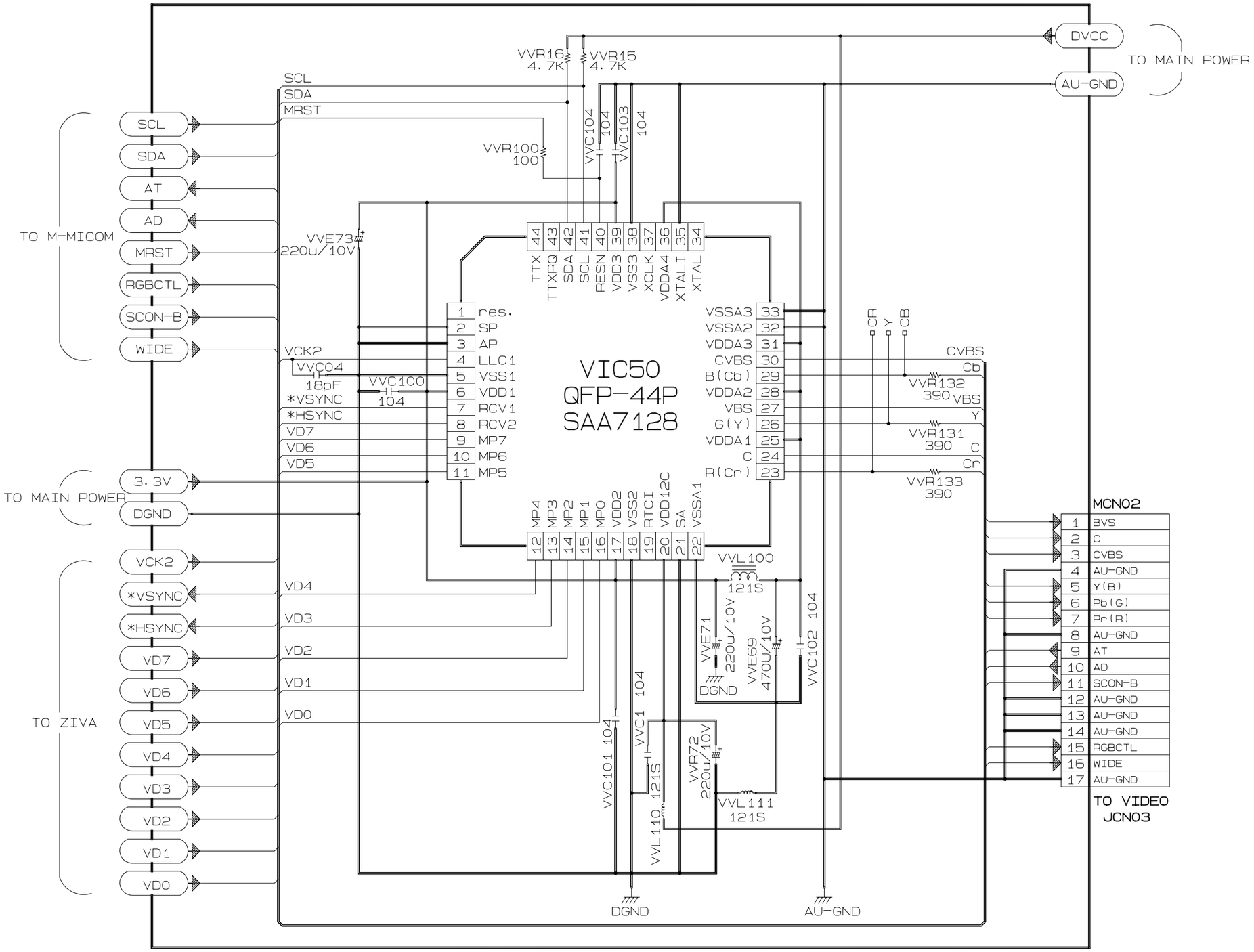
12-3 Main Micom



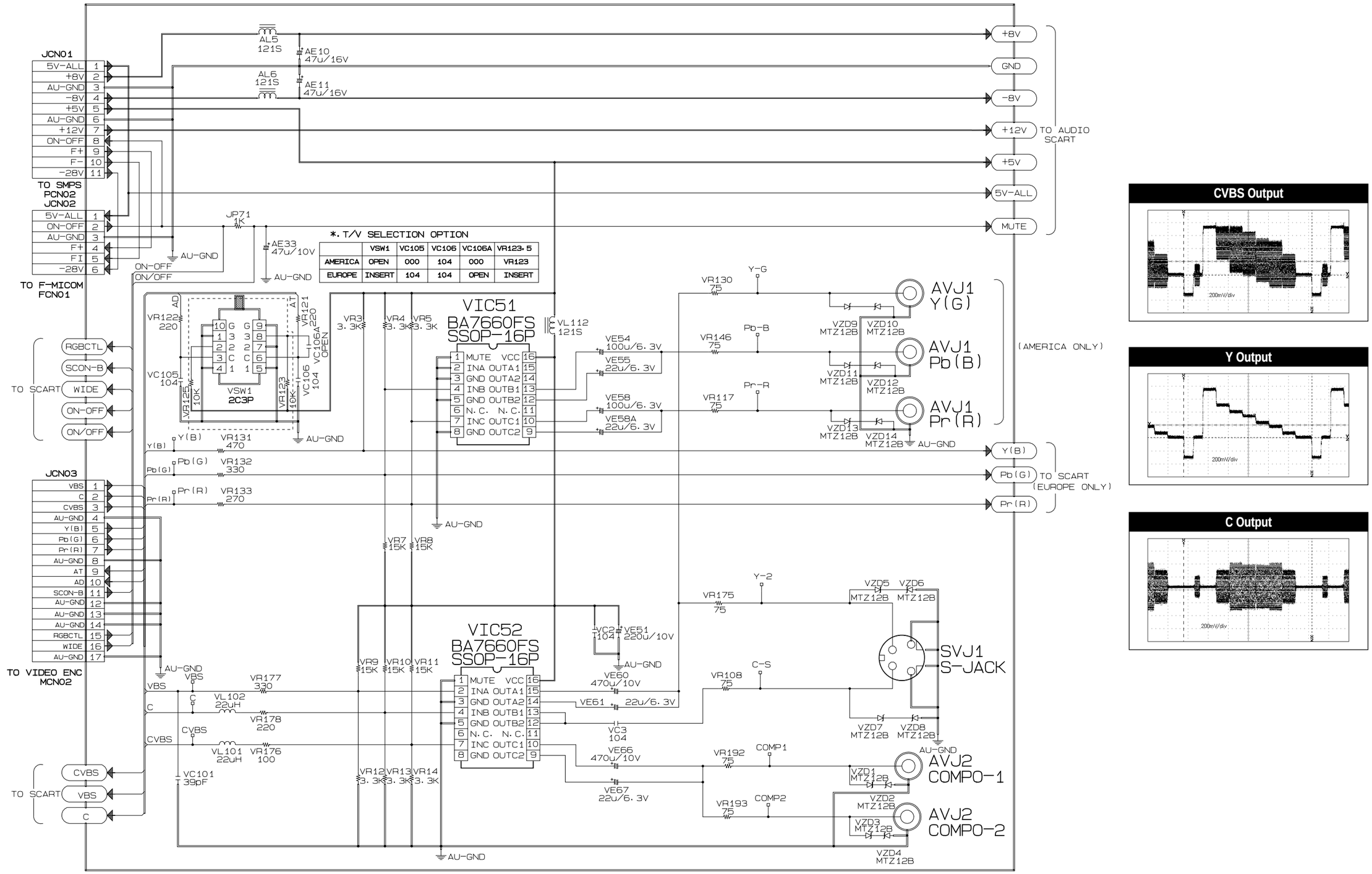
12-4 Servo


MCN05
TO DECK CONTROL
TCN03
TO M-MICOM
TO R/F
TO MAIN POWER
DRIC3
KA3082
ROULETTE
DRIC2
KA3010D
SSOP-28P
HEAT-SINK
SIC1
KS1452
QFP-80P
SIC8
NJM2903
SOP-8D
RSTB
CSB
DAB
SCLK
SDATA
SLOCK
TO M-MICOM
TO DSP
TO MAIN POWER
ZIVA
DSP
DVCC
DGND
AGND
MGND
SVCC
SDVCC
PLLHOLD
SERVODFCT
33.86M

12-5 Video Encoder



12-6 Video

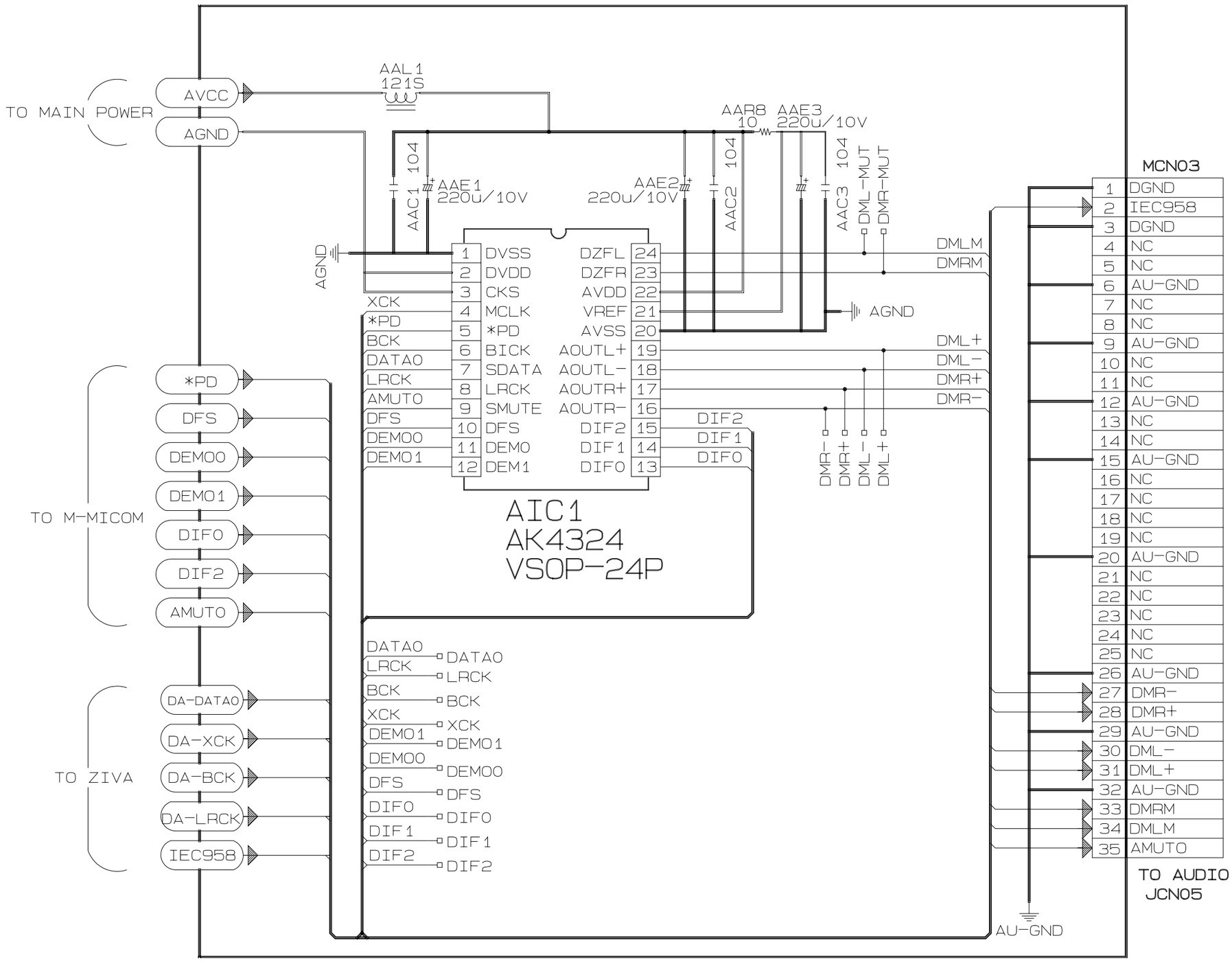


CVBS Output

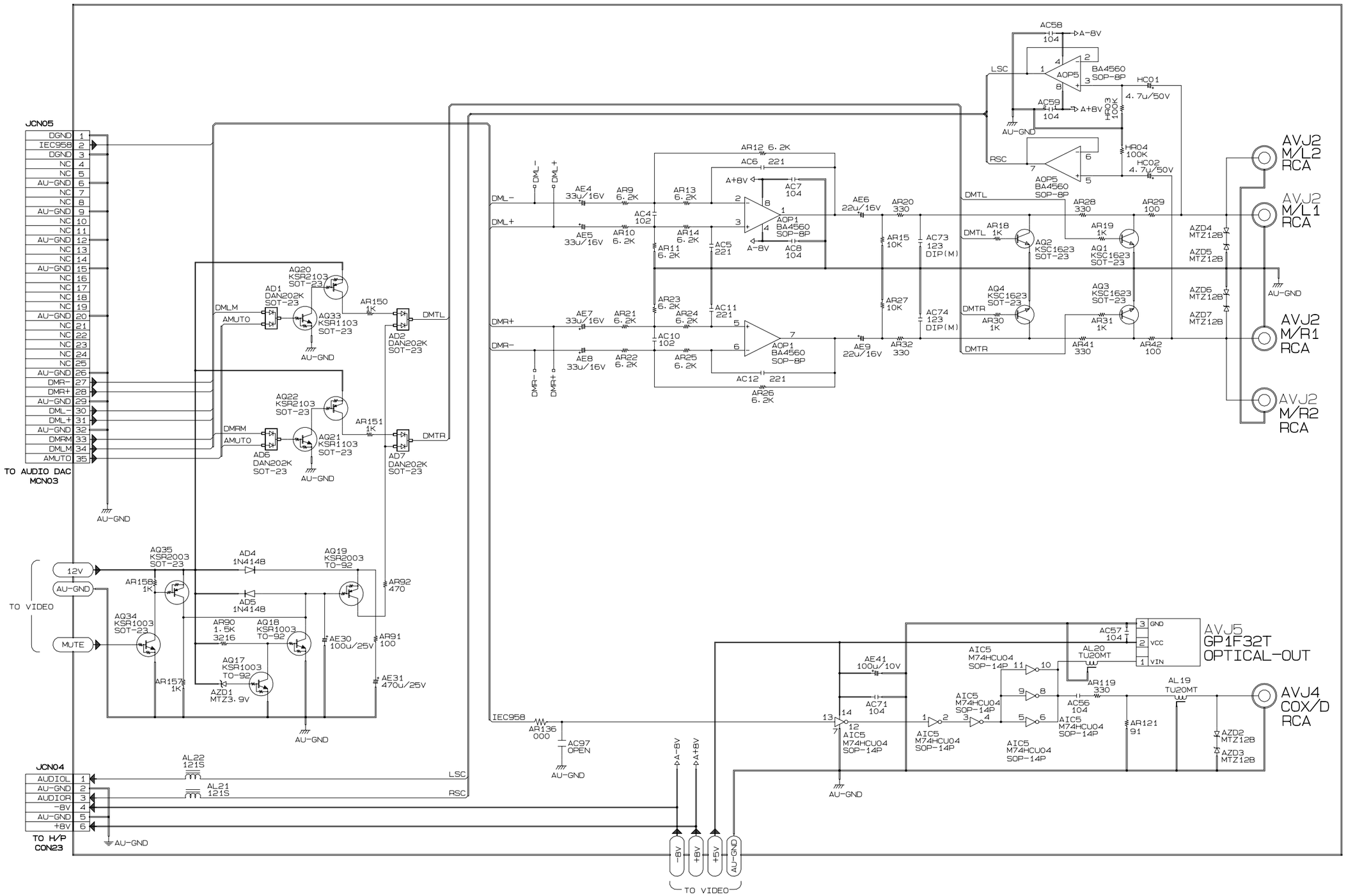
Y Output

C Output

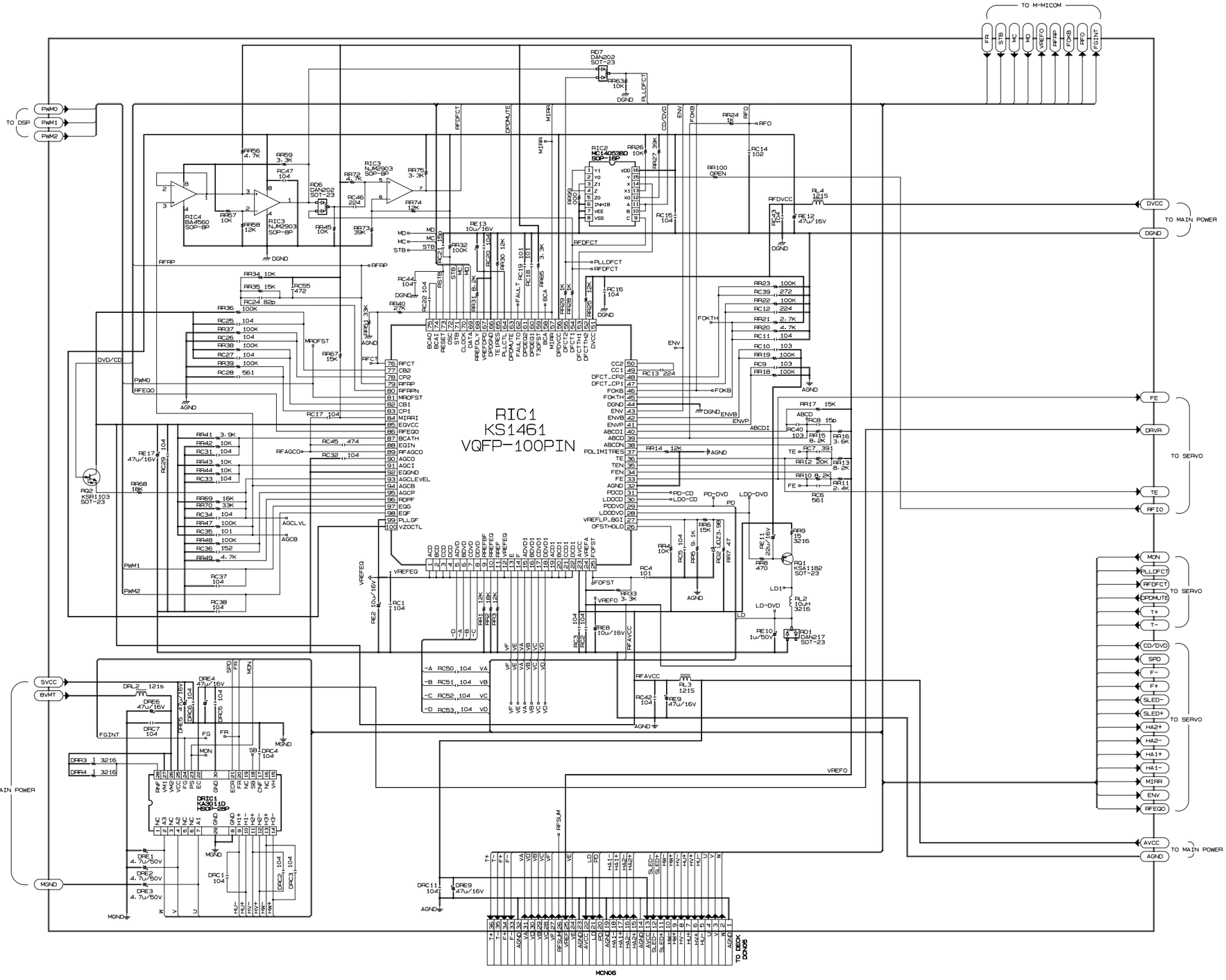
12-7 Audio DAC



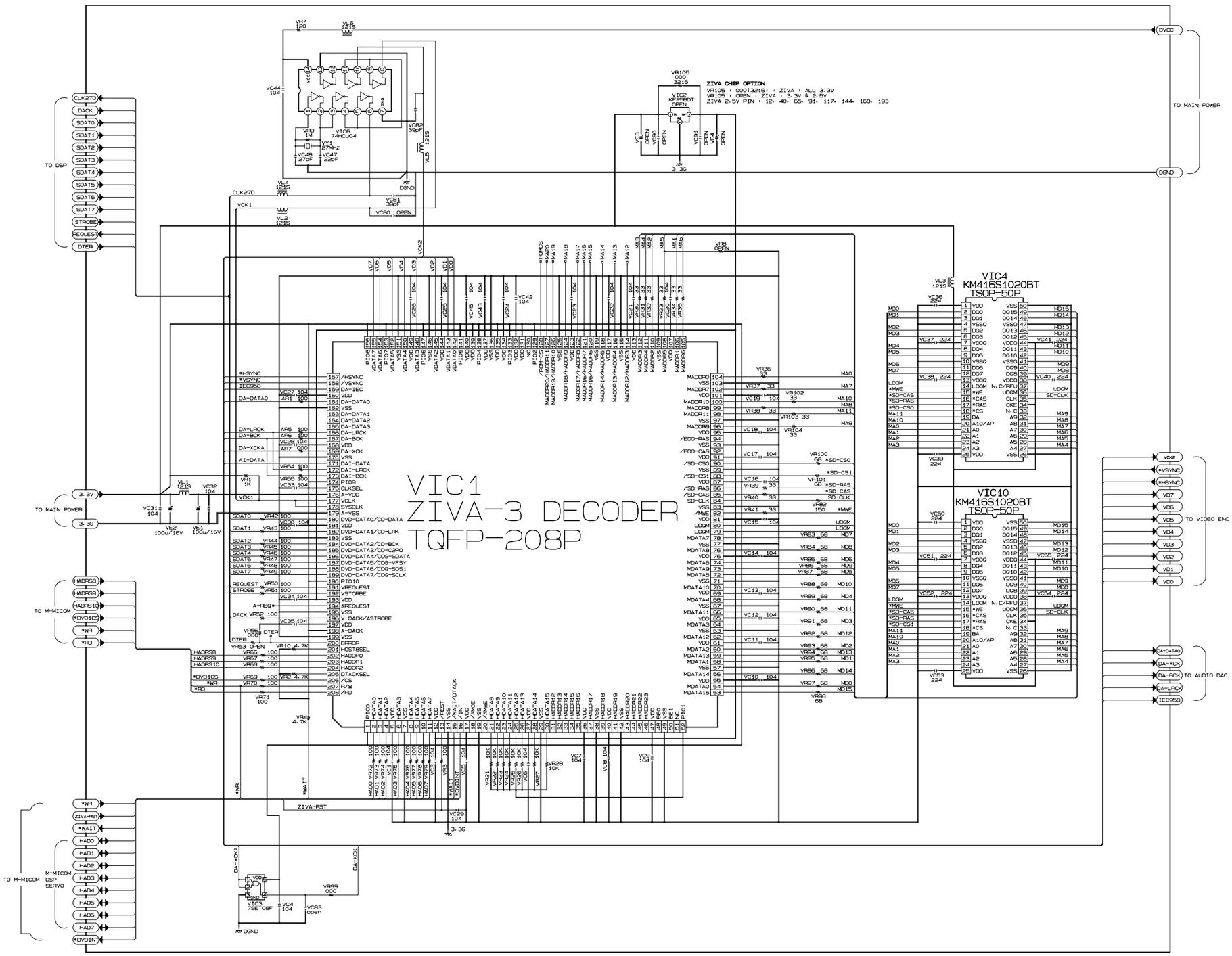
12-8 Audio


JCN05
DGND 1
IEC958 2
DGND 3
NC 4
NC 5
AU-GND 6
NC 7
NC 8
AU-GND 9
NC 10
NC 11
AU-GND 12
NC 13
NC 14
AU-GND 15
NC 16
NC 17
NC 18
NC 19
AU-GND 20
NC 21
NC 22
NC 23
NC 24
NC 25
AU-GND 26
DMR- 27
DMR+ 28
AU-GND 29
DML- 30
DML+ 31
AU-GND 32
DMRM 33
DMLM 34
AMUTO 35
TO AUDIO DAC MCN03
AU-GND
AQ20 KSR2103 SOT-23
AD1 DAN202K SOT-23
AQ33 KSR1103 SOT-23
AR150 1K
AD2 DAN202K SOT-23
DMLM
AMUTO
DMTL
AQ22 KSR2103 SOT-23
AD6 DAN202K SOT-23
AQ21 KSR1103 SOT-23
AR151 1K
AD7 DAN202K SOT-23
DMRM
AMUTO
DMTR
AQ35 KSR2003 SOT-23
AD4 1N4148
AQ19 KSR2003 TO-92
AR158 1K
AR92 470
AD5 1N4148
TO VIDEO
12V
AU-GND
MUTE
AQ34 KSR1003 SOT-23
AR90 1.5K 3216
AQ18 KSR1003 TO-92
AE30 100u/25V
AR91 100
AQ17 KSR1003 TO-92
AR157 1K
AZD1 MTZ3.9V
AE31 470u/25V
JCN04
AUDIOL 1
AU-GND 2
AUDIOR 3
-8V 4
AU-GND 5
+8V 6
TO H/P CON23
AL22 121S
AL21 121S
LSC
RSC
DML- DML+ DMR- DMR+
AE4 33u/16V
AE5 33u/16V
AE7 33u/16V
AE8 33u/16V
AR9 6.2K
AR10 6.2K
AR21 6.2K
AR22 6.2K
AR12 6.2K
AR13 6.2K
AR14 6.2K
AR23 6.2K
AR24 6.2K
AR25 6.2K
AR26 6.2K
AC4 102
AC5 221
AC10 102
AC11 221
AC12 221
AC6 221
AC7 104
AC8 104
AOP1 BA4560 SOP-8P
A+8V
A-8V
AE6 22u/16V
AE9 22u/16V
AR20 330
AR32 330
AR15 10K
AR27 10K
AC73 123 DIP(M)
AC74 123 DIP(M)
DMTL
DMTR
AR18 1K
AR19 1K
AR30 1K
AR31 1K
AQ2 KSC1623 SOT-23
AQ1 KSC1623 SOT-23
AQ4 KSC1623 SOT-23
AQ3 KSC1623 SOT-23
AR28 330
AR29 100
AR41 330
AR42 100
AZD4 MTZ12B
AZD5 MTZ12B
AZD6 MTZ12B
AZD7 MTZ12B
AVJ2 M/L2 RCA
AVJ2 M/L1 RCA
AVJ2 M/R1 RCA
AVJ2 M/R2 RCA
AC58 104
AC59 104
LSC
RSC
AOP5 BA4560 SOP-8P
HC01 4.7u/50V
HC02 4.7u/50V
HR03 100K
HR04 100K
IEC958
AR136 000
AC97 OPEN
AE41 100u/10V
AC71 104
AIC5 M74HCU04 SOP-14P
AC57 104
AL20 TU20MT
AR119 330
AC56 104
AL19 TU20MT
AR121 91
AVJ5 GP1F32T OPTICAL-OUT
AVJ4 COX/D RCA
AZD2 MTZ12B
AZD3 MTZ12B
GND
VCC
VIN
-8V
+8V
+5V
AU-GND
TO VIDEO

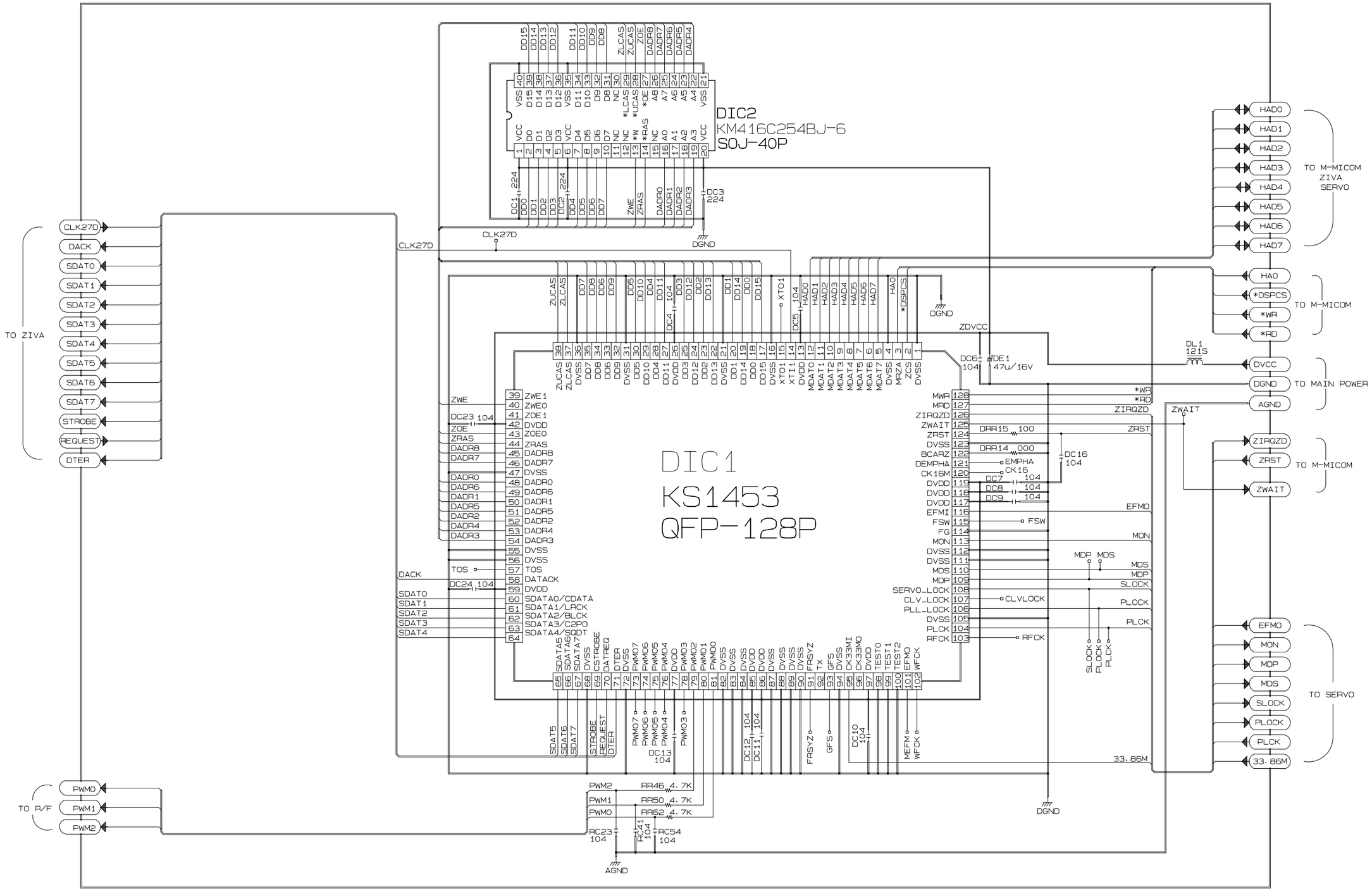
12-9 RF


RIC1
KS1461
VQFP-100PIN
TO M-MICOM
TO MAIN POWER
TO SERVO
TO SERVO
TO MAIN POWER
TO DSP
TO DECK
CON05
MCN06

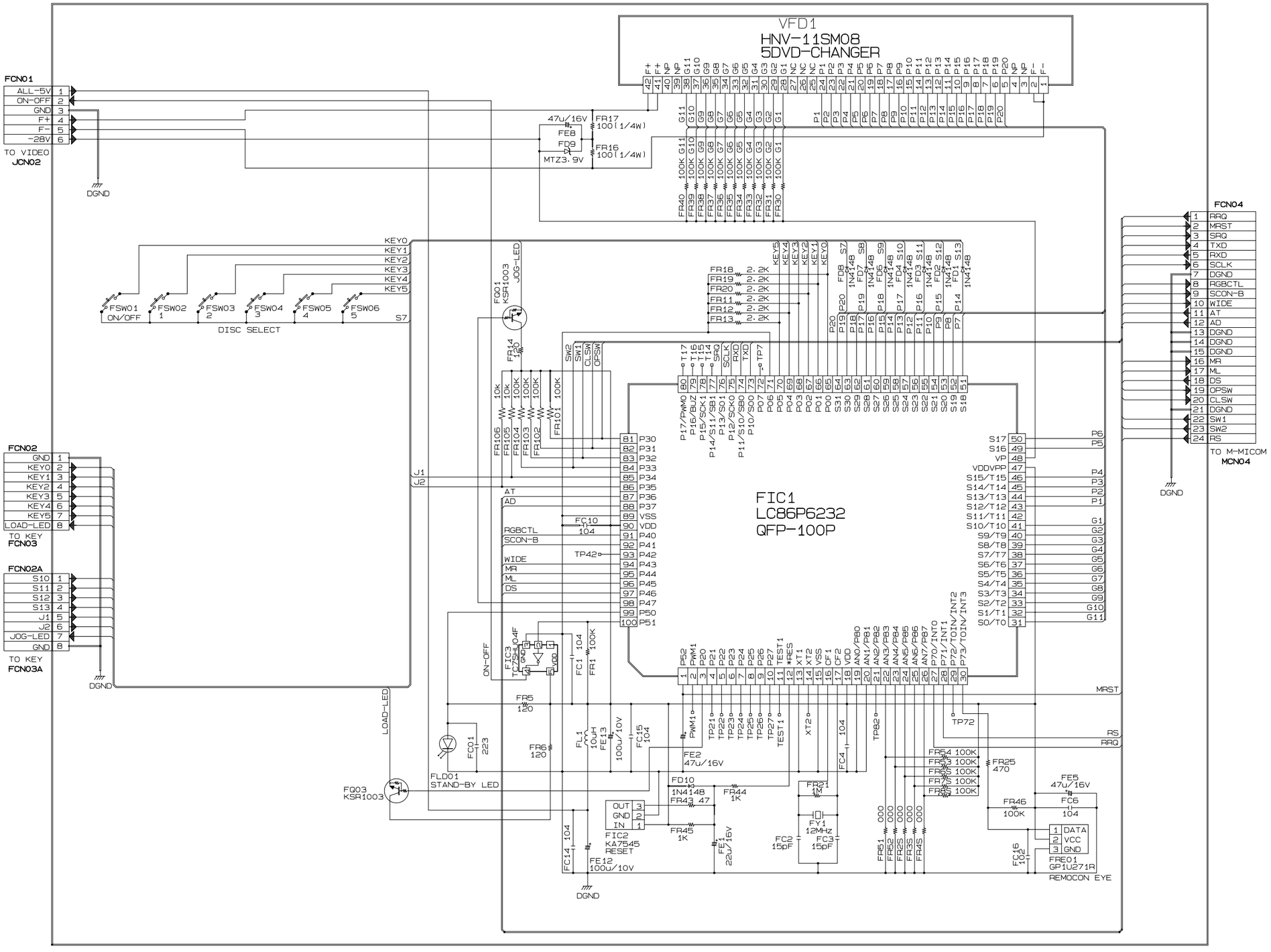
12-10 ZiVA


VIC1
ZIVA-3 DECODER
TQFP-208P
VIC4
KM416S1020BT
TSOP-50P
VIC10
KM416S1020BT
TSOP-50P
ZIVA CHIP OPTION
VR105 : 0001 3216 : ZIVA : ALL 3.3V
VR105 : OPEN : ZIVA : 3.3V & 2.5V
ZIVA 2.5V PIN : 12. 40. 66. 91. 117. 144. 168. 193
TO MAIN POWER
TO DSP
TO M-MICOM
TO VIDEO ENC
TO AUDIO DAC
M-MICOM DSP SERVO
CLK27D
DACK
SDAT0
SDAT1
SDAT2
SDAT3
SDAT4
SDAT5
SDAT6
SDAT7
STROBE
REQUEST
DTER
DVCC
DGND
3.3V
3.3G
ZIVA-RST
*WR
*RD
*WAIT
HAD0
HAD1
HAD2
HAD3
HAD4
HAD5
HAD6
HAD7
*DVDINT
*DVDICS
HADRS8
HADRS9
HADRS10
DA-DATA0
DA-LRCK
DA-BCK
DA-XCKA
AI-DATA
DA-XCK
IEC958
*HSYNC
*VSYNC
VCK1
VCK2
MD0
MD1
MD2
MD3
MD4
MD5
MD6
MD7
MD8
MD9
MD10
MD11
MD12
MD13
MD14
MD15
MA0
MA1
MA2
MA3
MA4
MA5
MA6
MA7
MA8
MA9
MA10
MA11
*SD-CS0
*SD-CS1
*SD-RAS
*SD-CAS
SD-CLK
*MWE
LDQM
UDQM
*SDICS
*WR
*RD
A-REQ
A-DACK
A-V-DACK
A-HOSTBSEL
A-HADDR0
A-HADDR1
A-HADDR2
A-DTACKSEL
/CS
R/W
/RD
/HSYNC
/VSYNC
DA-IEC
DA-DATA0
DA-DATA1
DA-DATA2
DA-DATA3
DA-LRCK
DA-BCK
DA-XCK
A-VDD
A-VSS
DVD-DATA0/CD-DATA
DVD-DATA1/CD-LRK
DVD-DATA2/CD-BCK
DVD-DATA3/CD-C2PO
DVD-DATA4/CDG-SDATA
DVD-DATA5/CDG-VFSY
DVD-DATA6/CDG-SOS1
DVD-DATA7/CDG-SCLK
VREQUEST
VSTORBE
V-DACK/ASTROBE
A-DACK
ERROR
HOSTBSEL
HADDR0
HADDR1
HADDR2
DTACKSEL
/CS
R/W
/RD
/WAIT
/DTACK
ZIVA-RST
3.3V
3.3G
DGND

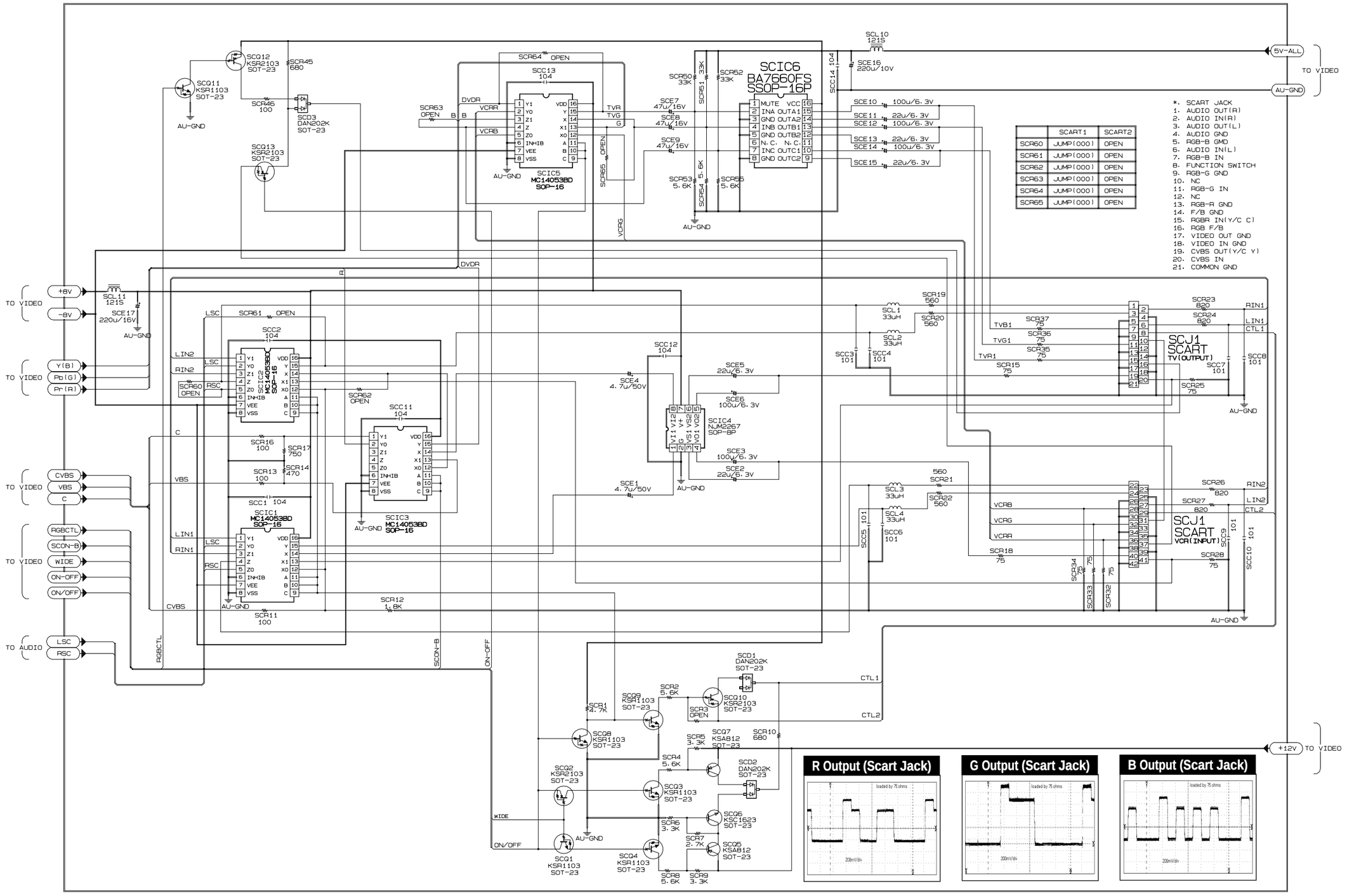
12-11 DSP


DIC2
KM416C254BJ-6
SOJ-40P
DIC1
KS1453
QFP-128P
TO ZIVA
CLK27D
DACK
SDAT0
SDAT1
SDAT2
SDAT3
SDAT4
SDAT5
SDAT6
SDAT7
STROBE
REQUEST
DTER
TOS
ZWE
ZOE
ZRAS
DADR0
DADR1
DADR2
DADR3
DADR4
DADR5
DADR6
DADR7
DADR8
HAD0
HAD1
HAD2
HAD3
HAD4
HAD5
HAD6
HAD7
HA0
*DSPCS
*WR
*RD
TO M-MICOM
ZIVA
SERVO
DVCC
DGND
AGND
TO MAIN POWER
ZIRQZD
ZRST
ZWAIT
TO M-MICOM
EFMO
MON
MDP
MDS
SLOCK
PLOCK
PLCK
33.86M
TO SERVO
*WR
*RD
ZDVCC
DL1 121S
DC6 104
DE1 47u/16V
DRR15 100
DRR14 000
DC16 104
EMPHA
CK16
DC7 104
DC8 104
DC9 104
FSW
CLVLOCK
RFCK
MDP MDS
SLOCK PLOCK PLCK
PWM0
PWM1
PWM2
TO R/F
RR46 4.7K
RR50 4.7K
RR62 4.7K
RC23 104
RC41 104
RC54 104
DGND
AGND

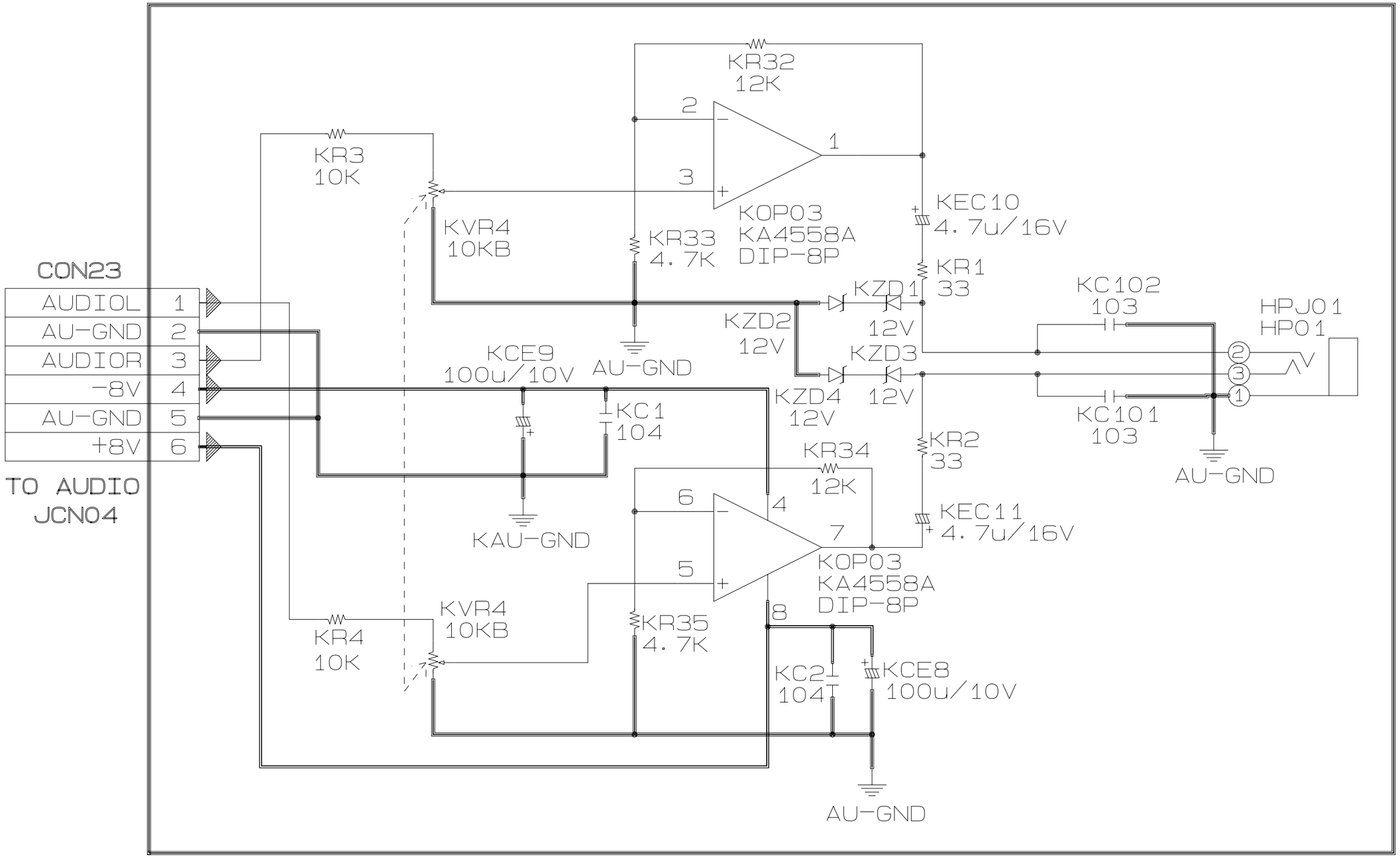
12-12 Front Micom/VFD Display



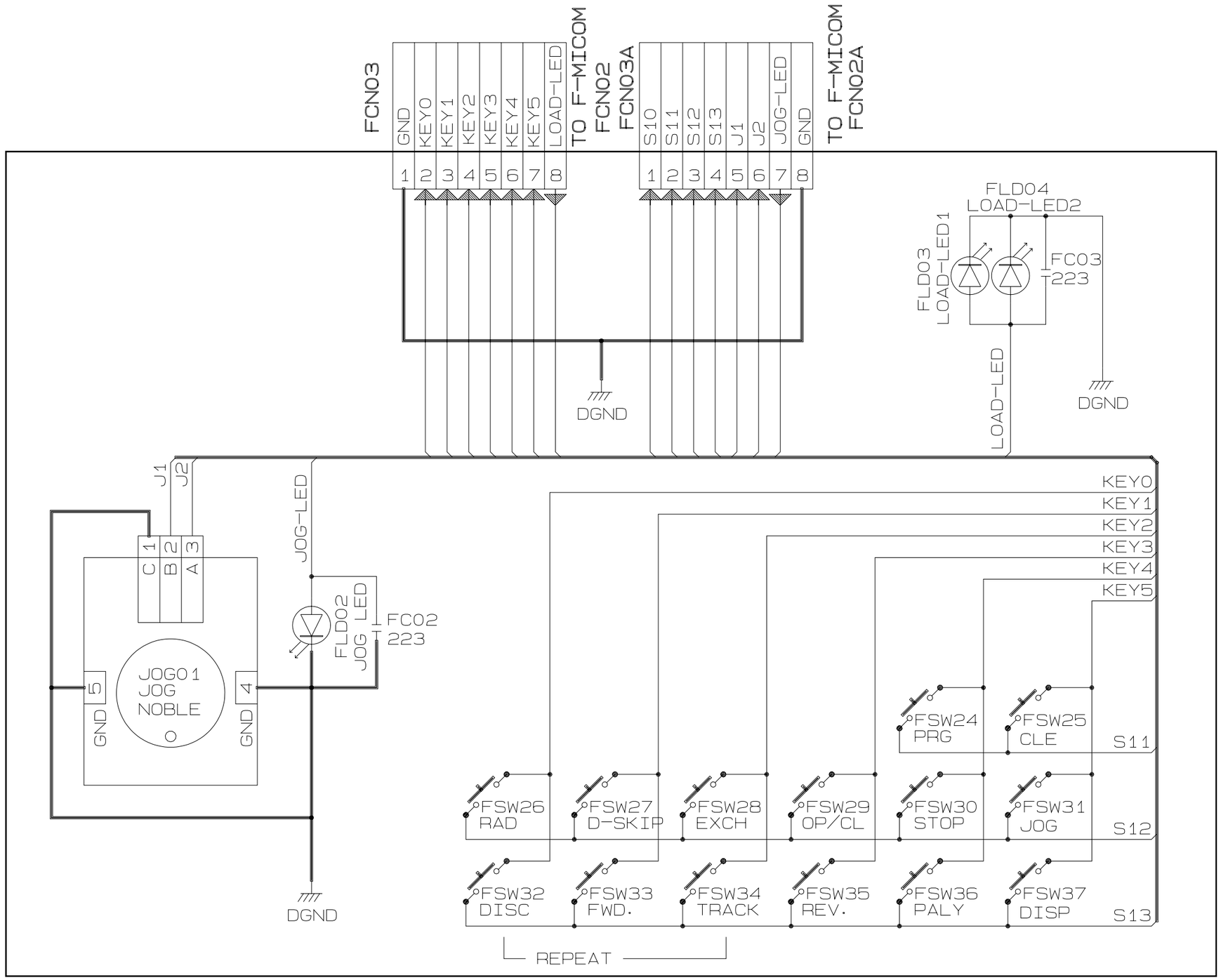
12-13 Scart Jack (Europe Only)



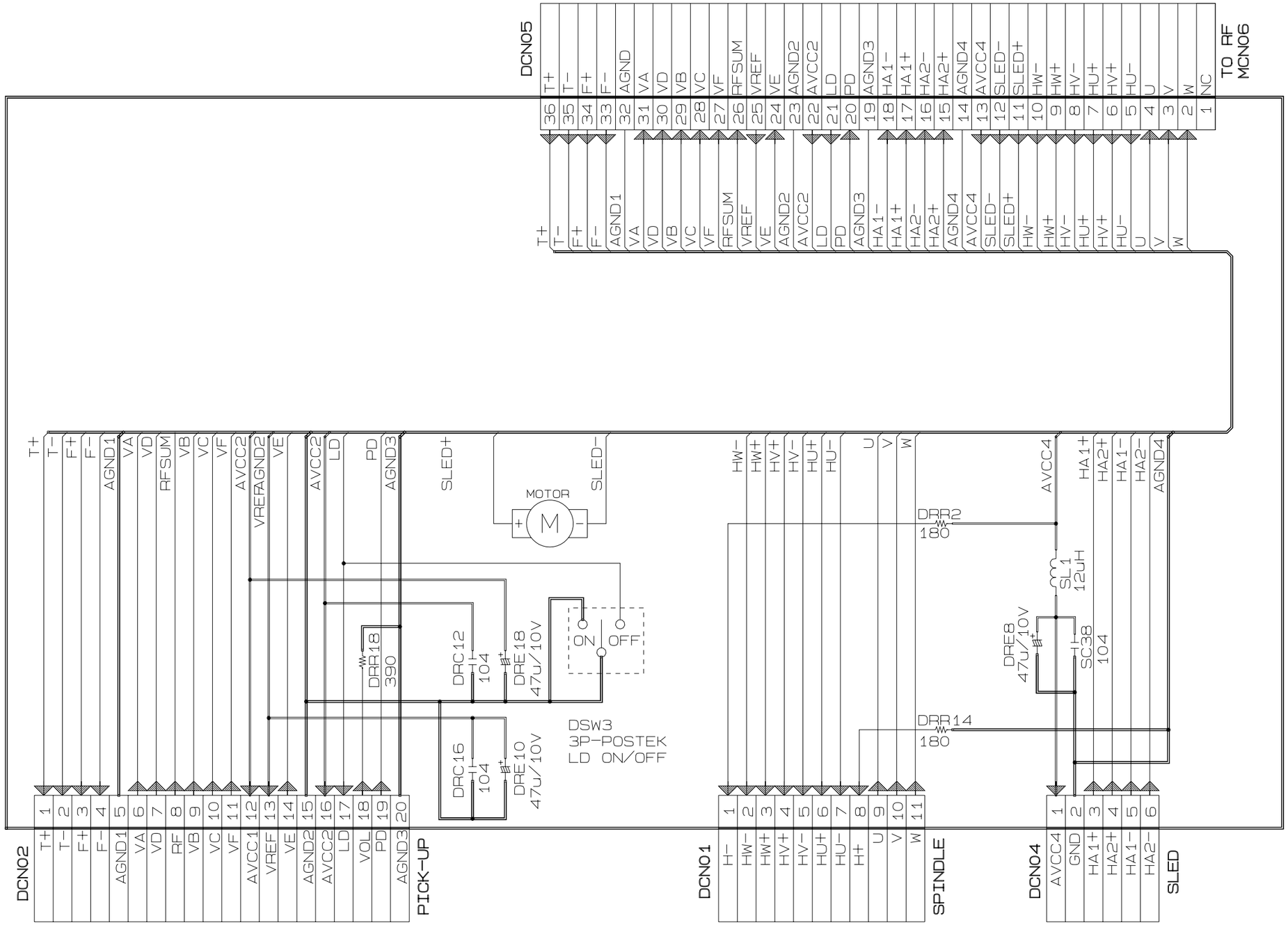
12-14 Head Phone



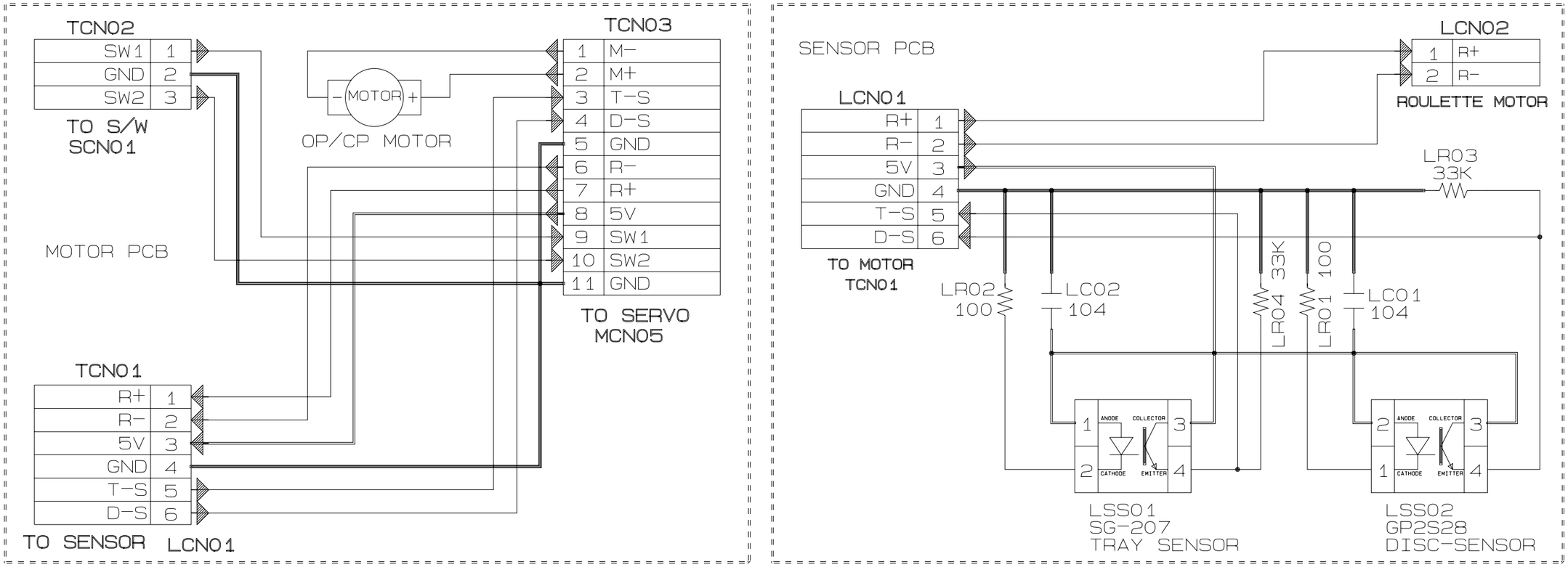
12-15 Key

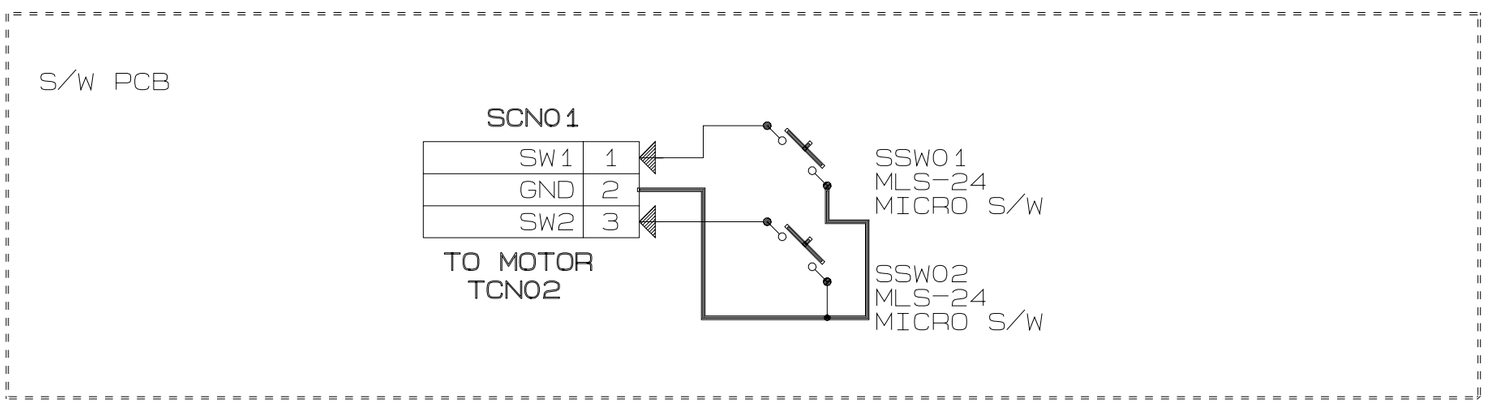

FCN03
GND
KEY0
KEY1
KEY2
KEY3
KEY4
KEY5
LOAD-LED
TO F-MICOM
FCN02
FCN03A
S10
S11
S12
S13
J1
J2
JOG-LED
GND
TO F-MICOM
FCN02A
DGND
FLD04
LOAD-LED2
FLD03
LOAD-LED1
FC03
223
LOAD-LED
DGND
J1
J2
JOG-LED
C 1
B 2
A 3
JOGO1
JOG
NOBLE
5
GND
4
GND
FLD02
JOG LED
FC02
223
DGND
KEY0
KEY1
KEY2
KEY3
KEY4
KEY5
FSW24
PRG
FSW25
CLE
S11
FSW26
RAD
FSW27
D-SKIP
FSW28
EXCH
FSW29
OP/CL
FSW30
STOP
FSW31
JOG
S12
FSW32
DISC
FSW33
FWD.
FSW34
TRACK
FSW35
REV.
FSW36
PALY
FSW37
DISP
S13
REPEAT

12-16 Deck

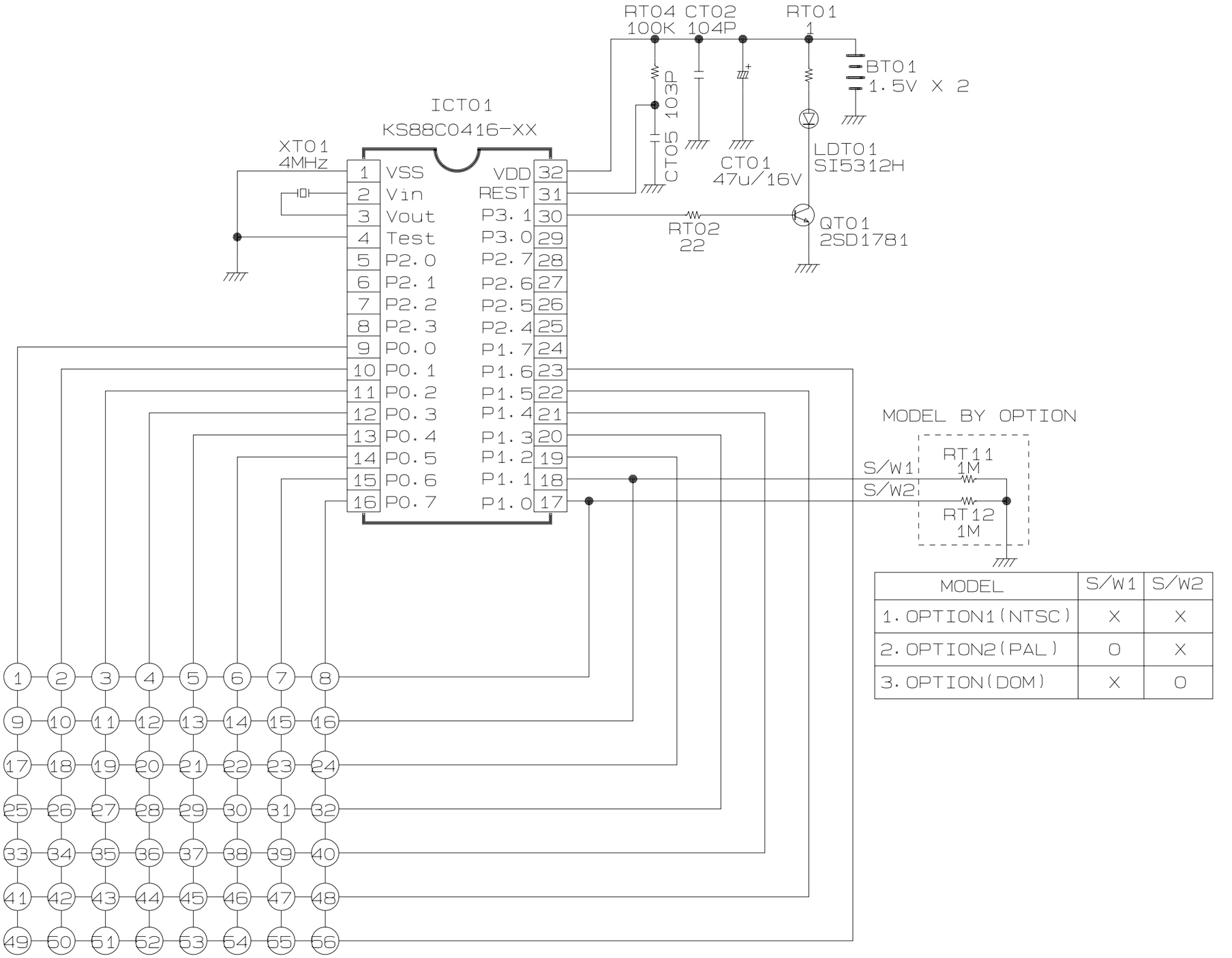

DCN05
T+
T−
F+
F−
AGND
VA
VD
VB
VC
VF
RFSUM
VREF
VE
AGND2
AVCC2
LD
PD
AGND3
HA1−
HA1+
HA2−
HA2+
AGND4
AVCC4
SLED−
SLED+
HW−
HW+
HV−
HU+
HV+
HU−
U
V
W
NC
TO RF
MCN06
MOTOR
DRR18
390
DRC12
104
DRE18
47u/10V
ON
OFF
DRC16
104
DRE10
47u/10V
DSW3
3P-POSTEK
LD ON/OFF
DRR2
180
DRR14
180
SL1
12uH
DRE8
47u/10V
SC38
104
DCN02
PICK-UP
VOL
RF
AVCC1
VREF
DCN01
SPINDLE
H−
H+
DCN04
SLED
GND

12-17 Deck Control





12-18 Remote Control



MODEL	S/W1	S/W2
1. OPTION1(NTSC)	X	X
2. OPTION2(PAL)	O	X
3. OPTION(DOM)	X	O

MEMO